

December 1984 Vol. 1, No. 5

Canada \$3.95 \$3

soft sector

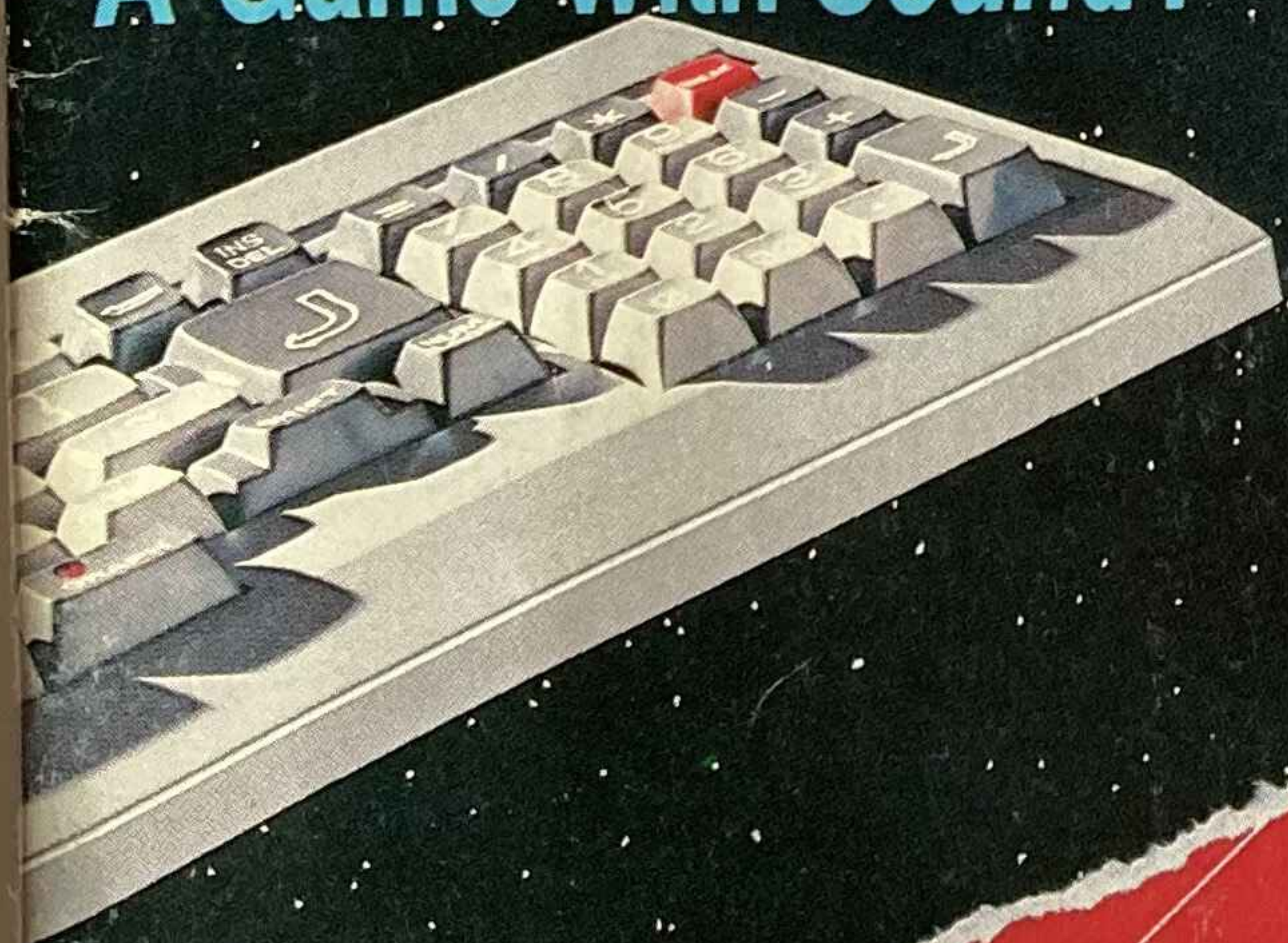
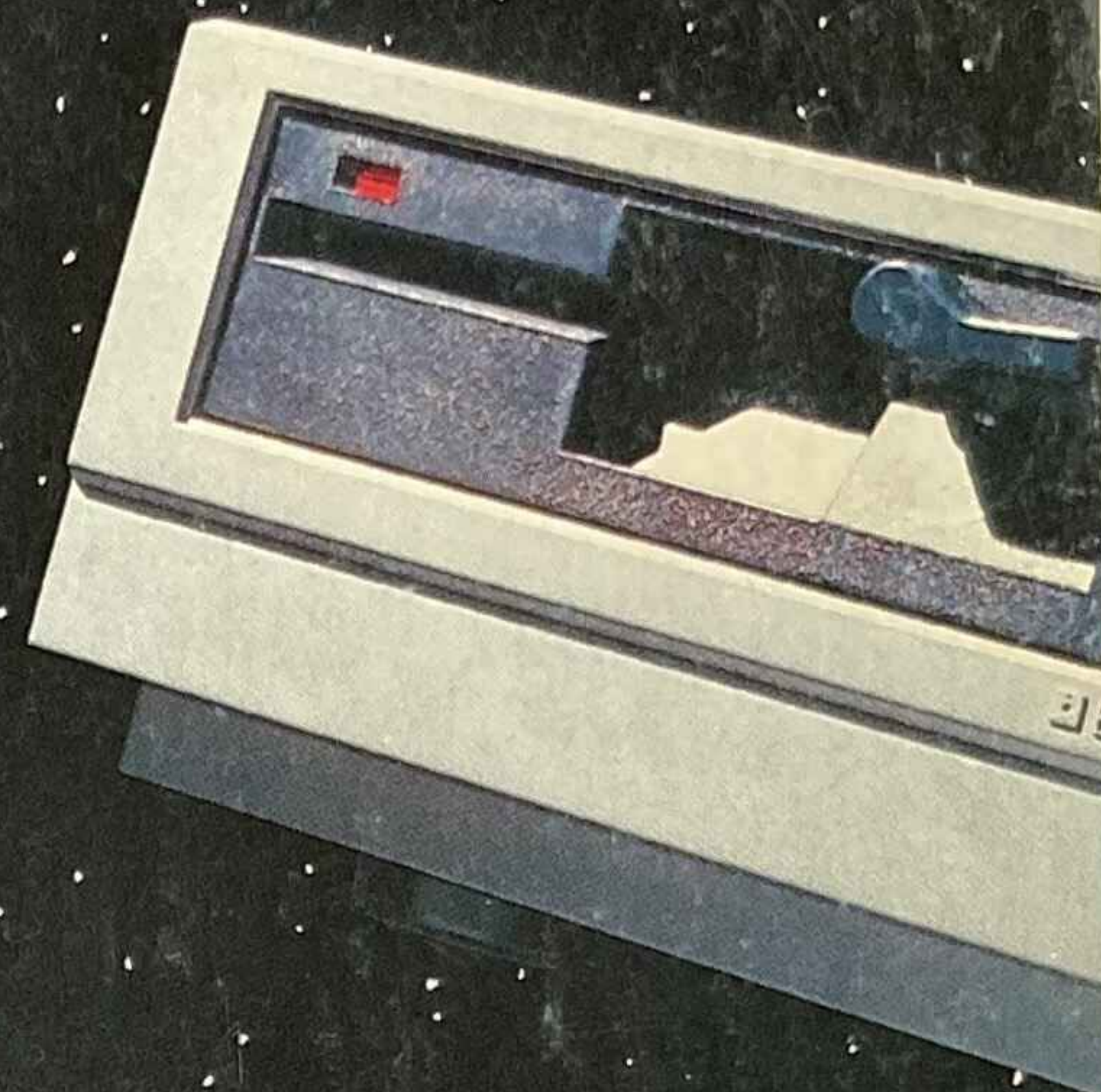
The Monthly Magazine For Sanyo MBC-550 and 555 Users

HOLIDAY LUMINARIES

Create Hi-Res
Graphics

An In-Depth
Look At DOS

Play Run'Round —
A Game With Sound!



PLUS
A Preview Of Sanyo's New
Video RAM Board

TIME BANDIT

TIME BANDIT: The Adventure Arcade

By Bill Dunlevy and Harry Lafnear

Fast-paced arcade action, full scale adventures, and endless variety is now only a disk's reach from your Sanyo.

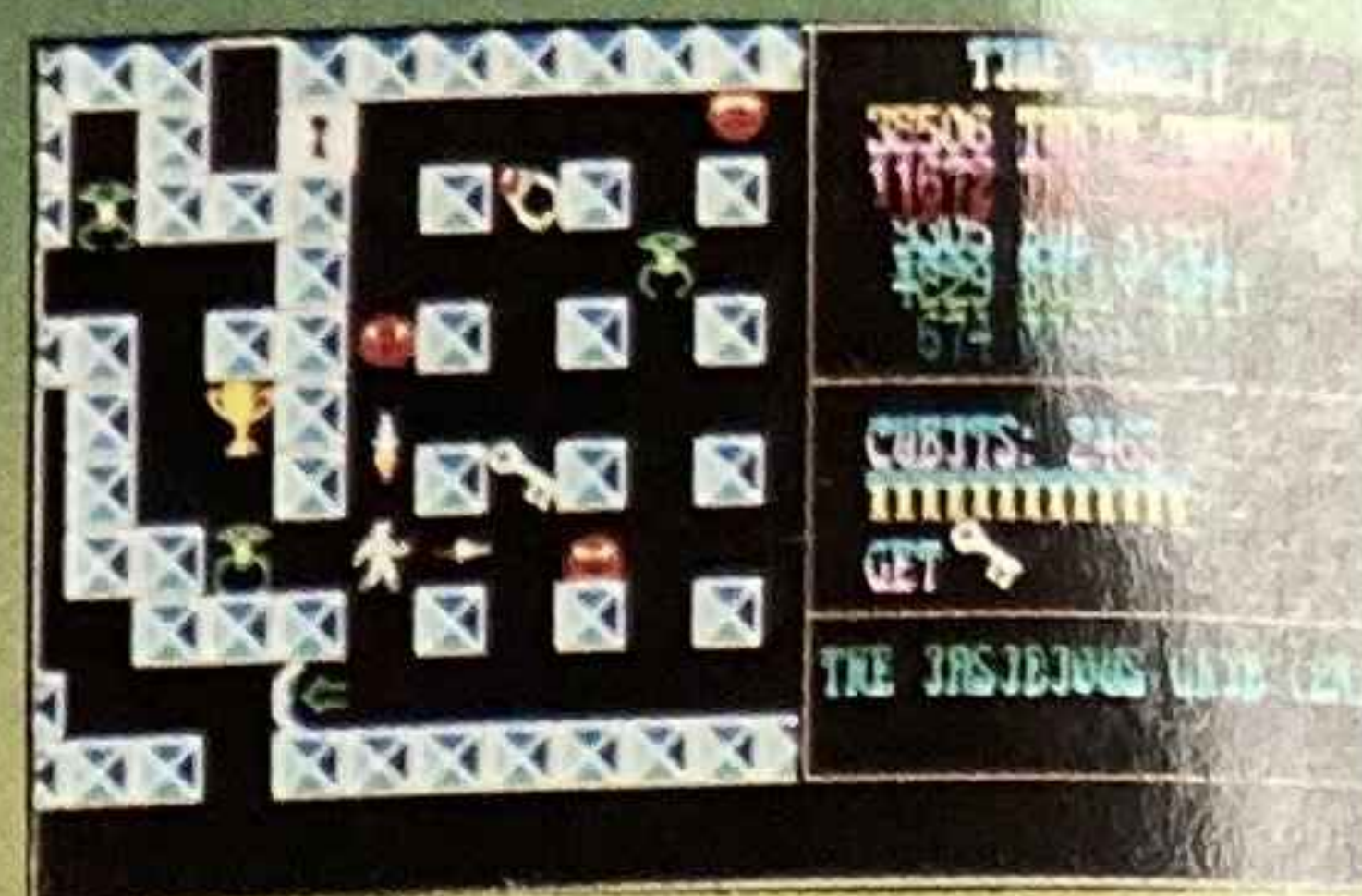
Use the Timegates to explore the Worlds of Time: the medieval halls of FANTASY WORLD, the great frontiers of WEST WORLD, and the bizarre future in SPACE WORLD. Choose from more than TWENTY exciting adventuring areas throughout the game, with over 15 levels in each. THAT'S OVER 300 VARIATIONS IN ALL!

TIME BANDIT'S dual-player mode lets two players in on all the action at the same time—on their OWN playing windows!

Ultra-crisp Supergraphics, colorful scrolling landscapes, full animation of a multitude of characters, amazing sound, and literally HUNDREDS OF SCREENS: it's all here! The conquest of Time and Space awaits you.

128K Sanyo 550/555 required

\$39.95



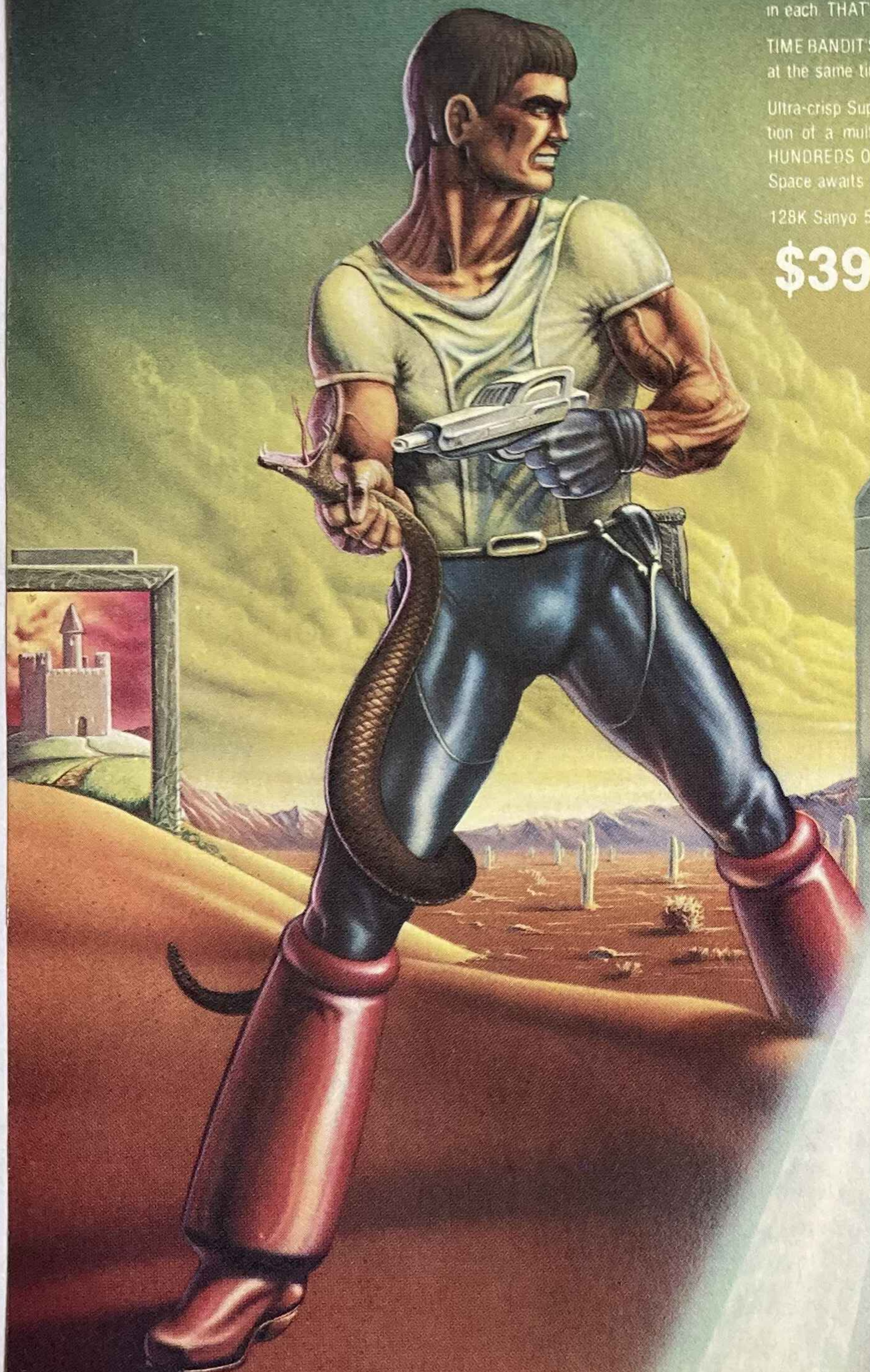
Thunder Chief



Major Motion

MichTron

576 S. Telegraph Road Pontiac, Michigan 48053
Orders & Info: (313) 334-5700



ARMSTRONG

MBC 550 \$699.00

- 16-bit 8088 CPU
- 128KB RAM, EXPANDABLE TO 256KB
- 160KB mini floppy disk drive
- MS-DOS operating system
- Detachable keyboard
- Interface for Centronics parallel printer
- Color graphics

Plus
Wordstar
Calcstar
Easy Writer I

MBC 550-2 \$799.00

- Same as above except with 360KB disk drive

MBC 550-4 \$899.00

- Same as above except with 800KB disk drive



High-Performance Computer System

SANYO OPTIONS:

CRT 30, 12" Green	\$129.00
CRT 36, 12" Green, High Res.	169.00
CRT 70, 13" RGB Color.....	579.00
Add on 160K drive	149.00
Add on 160K drive w/software ...	299.00
Add on 360K drive	169.00
Add on 360K drive w/software ...	399.00
Add on 800K drive	189.00
Add on 800K drive w/software ..	449.00
Add on RS232 Port	89.00
Add on 128K memory.....	119.00
Software	Call

MBC 555 \$999.00

- 16-bit 8088 CPU
- 128KB RAM, expandable to 256KB
- Two 160KB mini floppy disk drives
- MS-DOS operating system
- Detachable keyboard
- Interface for Centronics parallel printer
- Color graphics

Plus
Wordstar
Calcstar
Easy Writer I
and your choice of:

STAR PAC

Infostar
Spellstar
Mailmerge

EASY PAC

Easy Writer II
Easy Planner
Easy Mailer
Easy Filer

MBC 555-2 \$1099.00

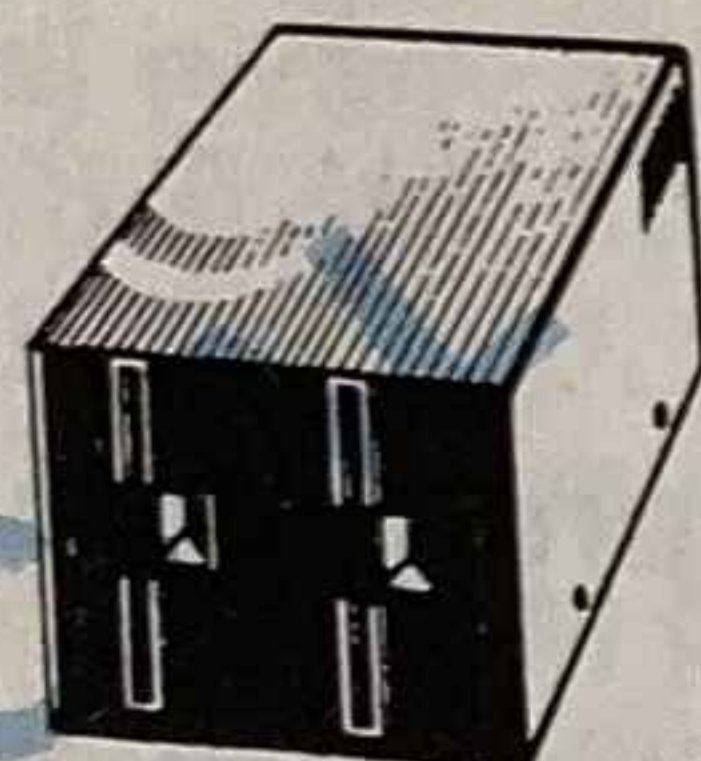
- Same as above except with two 360KB disk drives

MBC 555-4 \$1299.00

- Same as above except with two 800KB disk drives

\$169.00

(Substantial
Quantity
Discounts)



NEW SHUGART SA200's

- Single Side, Double Density 5 1/4"
- 250Kb Formatted Capacity per dr.
- 40 Track, 48 T.P.I.
- Dual Drives in Enclosure
- New in Factory Sealed Cartons

\$199.00



13" RGB COLOR MONITOR

- Manufactured by NEC
- Model JC1401D
- 400 x 240 Resolution
- 8 Color Display

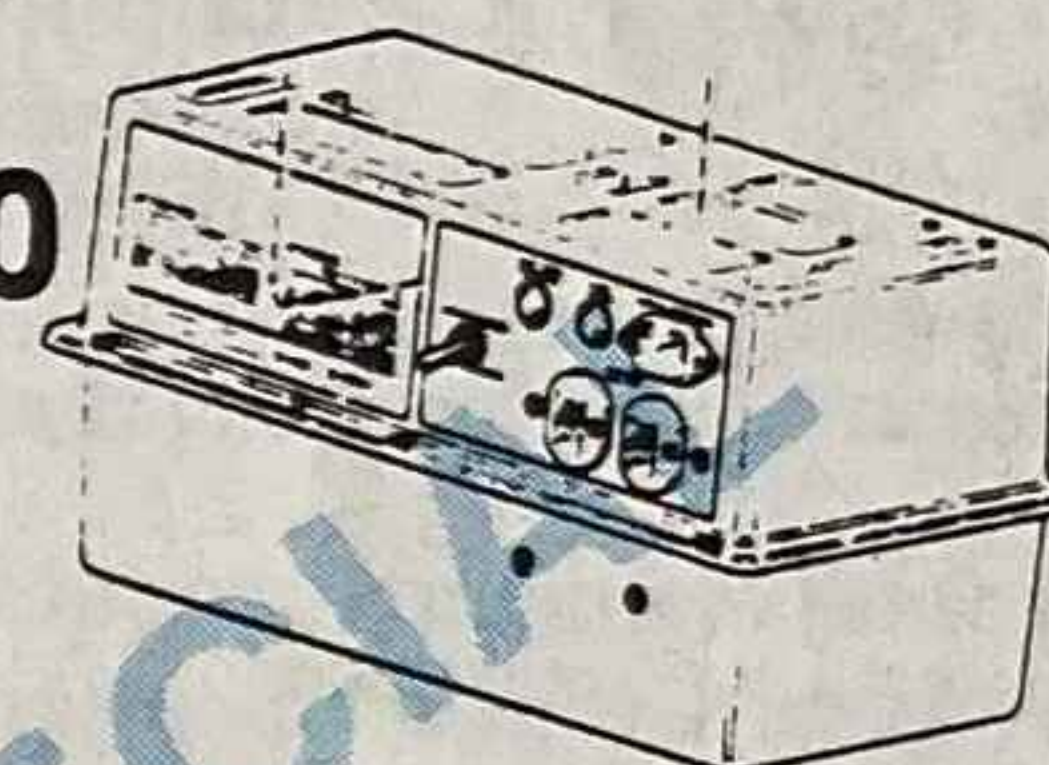
\$89.00



12" GREEN MONITOR

- Manufactured by NEC
- Model 1201M
- 12" Green Composite Screen
- High Resolution

\$99.00



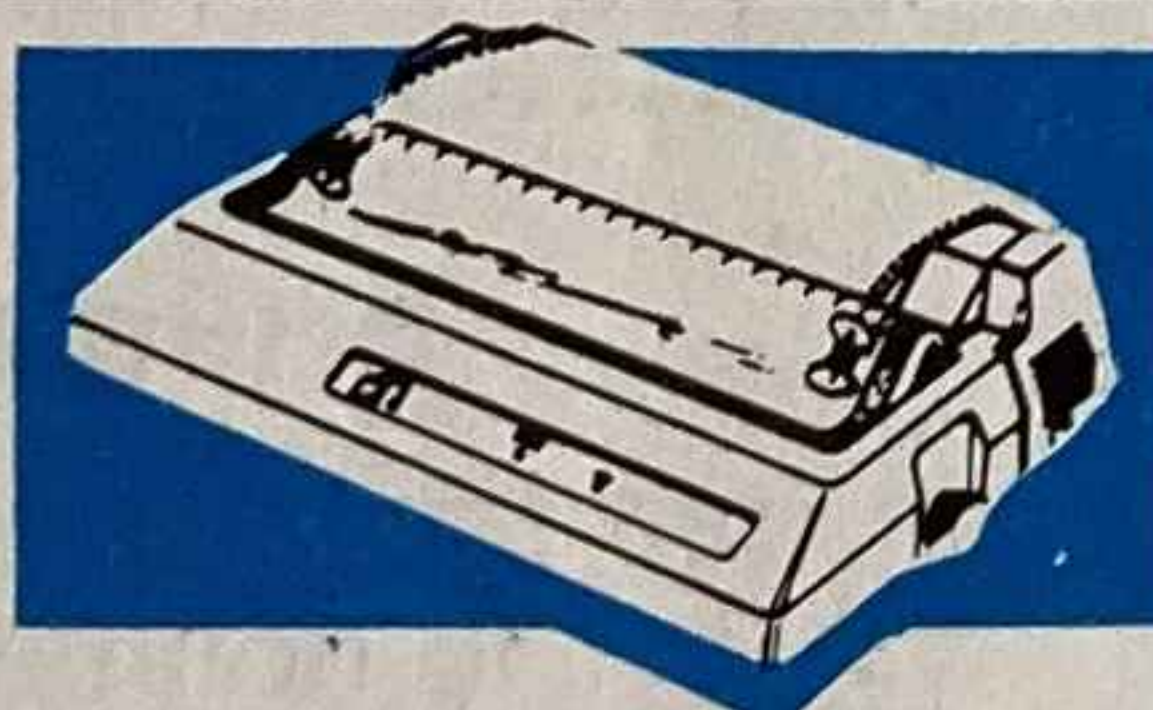
UNIVERSAL POWER SUPPLY

- Approx. 2 Hours Battery Time
- Rechargeable
- Low Battery Alarm
- New in Factory Sealed Carton

CENTRONICS

Model 152

\$229.00



STANDARD FEATURES

- 150 CPS @ 10 CPI
- 5, 8, 18, 10, 16.36 CPI
- 9x7 Dot Matrix
- Bi-Directional, Logic Seeking @ 10 CPI
- Cassette Ribbon
- Adjustable Tractors
- Paper Empty Detection
- Variable Top of Form
- 96 Character ASCII
- Full One-Line Buffer
- Self-Test
- RS-232 Interface
- Auto Line Feed
- Weight: 28.9 lbs.

FORMS HANDLING

- Copy: Original plus 4 copies
- Fan Fold: 4" to 15" wide

OPERATOR CONTROLS/INDICATORS

- Power on/off switch
- Select switch
- Top of form switch
- Variable forms length switch
- Auto line feed switch
- Select light
- Paper empty light
- Power light

DATA INPUT

- Serial (Asynchronous RS-232), 7-bit
- ASCII with odd or even parity, 8-bit
- ASCII with no parity, Protocol with X-on/X-off, Reverse Channel or Data Terminal Ready
- 768 Character Buffer

PRINTERS

OKIDATA

ML82A	\$309
ML83A	\$539
ML84	\$799
ML92	\$429
ML93	\$649
PM2350	\$1799
PM2410	\$1999

EPSON

RX80	\$269
RX80FT	\$349
RX100	\$549
FX80	\$489
FX100	\$699
MX100	\$49

SILVER-REED

EXP400	\$299
EXP500	\$399
EXP550	\$439
EXP770	\$899

PANASONIC

KXP1090	\$299
KXP1091	\$349

QUME

LETTERPRO 20	\$599
SPRINT 11/40	\$1429
SPRINT 11/50	\$1549

TOSHIBA

1350	\$1695
------------	--------

1340	\$795
1351	\$1795

NEC

2000	\$695
2010	\$749
2015	\$749
2030	\$749
2050	\$949
3510	\$1429
3515	\$1449
3530	\$1499
3550	\$1899
7710	\$2049
7715	\$2049
7730	\$2049

MONITORS

TAXAN

12" GREEN	\$109
12" AMBER	\$119
RGBI	\$319
RGB III	\$479

ZENITH

ZVM 122	\$129
ZVM 123	\$119
ZVM 131	\$319
ZVM 134	\$549
ZVM 135	\$499

COMREX

12" GREEN	\$119
12" AMBER	\$129
13" COMPOSITE COLOR	\$259

13" RGB COLOR	\$299
14" RGB COLOR HIGH RES.	\$499

AMDEK

300G	\$129
300A	\$149
310	\$179
Color I	\$299
Color II	\$439

SANYO

CRT 30	\$129
CRT 36	\$169
CRT 70	\$579

MODEMS

ANCHOR

Volksmodem	\$69
Mark VII	\$139
Mark XII	\$269

DISK DRIVES

TEAC

FD55A	\$149
FD55B	\$169
FD55F	\$189

SHUGART

SA 200, 2/3 height (See special)

COMPUTERS

Sanyo	Columbia
Eagle	Toshiba
Zenith	Seiko
Televideo	Altos
NEC	Texas Instruments

*Mastercard & Visa (Add 3%)

*Prices and availability subject to change without notice

SUNTEL CORP.

1407 Downtown Blvd.
Raleigh, N. C. 27603

(919) 832-3479

soft sector

The Monthly Magazine for
Sanyo MBC-550 and 555 Users

Vol. I, Issue 5

December 1984

Editor and Publisher
Lawrence C. Falk

Managing Editor Kevin Nickols
Copy Editor Tamara Solley
Technical Editor Danny Humphress
Submissions Editor Jutta Kapfhammer
New Products/Reviews Editor Monica Dorth
Consulting Editors Gordon Monnier, Courtney Noe
Contributing Editors Fred Blechman,
Michael W. Ecker, Ph.D., Tim Purves,
Brian M. Stone, Charlotte A. Stone
Editorial Assistants Valarie Edwards, Wendy Falk,
Debbie Hartley, Suzanne Benish Kurowsky,
Lynn Miller, Shirley Morgan
Technical Assistant Ed Ellers
Art Director Neal C. Lauron
Design Staff Jerry McKiernan, Kevin Quiggins
Advertising Coordinator Charlotte Ford
(502) 228-4492
Advertising Assistant Debbie Baxter

For Soft Sector Advertising and Marketing
office information, see page 78

FPSS, Ag. Publishing Enterprises, Inc.

President

Lawrence C. Falk

Editorial Director James E. Reed

Creative Director Sally Gellhaus

General Manager Patricia H. Hirsch

Assistant General Manager for Finance
Donna Shuck

Bookkeeper Diane Moore

Advertising Accounts Doris Taylor

Dealer Accounts Judy Quashnock

Administrative Assistant To The Publisher
Marianne Booth

Director of Fulfillment Services Bonnie Shepard

Assistant Customer Service Manager Sandy Apple

Customer Service Representatives

Deidra Henry, Monica Wheat

Manager of Public Relations Belinda Kirby

Word Processor Manager Lynda Wilson

Research Assistants Laurie Falk,

Debbie Leake, Loretta Varda

Dispatch Janice Eastburn

Production Assistant Melba Smith

SOFT SECTOR — The Monthly Magazine for Sanyo MBC-550 and 555 Users is published every month of the year by FPSS, Ag. Publishing Enterprises, Inc., 9529 U.S. Highway 42, P.O. Box 385, Prospect, KY, 40059. Phone (502) 228-4492. **SOFT SECTOR** — The Monthly Magazine for Sanyo MBC-550 and 555 Users and the **SOFT SECTOR** logotypes are trademarks of FPSS, Ag.

Second class postage pending at Prospect, KY and additional offices. POSTMASTER: Send address changes to **SOFT SECTOR**, P.O. Box 385, Prospect, KY 40059. Forwarding Postage Guaranteed.

Entire contents copyright © 1984, by FPSS, Ag. **SOFT SECTOR** — The Monthly Magazine for Sanyo MBC-550 and 555 Users is intended for the private use and pleasure of its subscribers and purchasers and reproduction by any means is prohibited. Use of information herein is for the single end use of purchasers and any other use is expressly prohibited. All programs herein are distributed in an "as is" basis, without warranty of any kind whatsoever.

Sanyo MBC-550 and 555 are registered ® trademarks of the Sanyo Business Systems Corp.

Subscriptions to **SOFT SECTOR** — The Monthly Magazine for Sanyo MBC-550 and 555 Users are \$28 per year in the United States. Canadian rates are U.S. \$35. Surface mail to other countries is U.S. \$64, air mail U.S. \$85. All subscriptions begin with the next available issue.

Payment accepted by VISA, MasterCard, American Express, Cash, Check or Money Order in United States currency only.

FEATURES

Window On The World/Dan Webber	8
A Hi-Res graphics program to rival the best	
Operating Systems For The MBC-550 Series/Jon Geist	15
An in-depth look at DOS	
The Run'Round Challenge/J. Weaver Jr.	28
More sound than you've ever heard from your Sanyo	
The Sound Routine Technique/J. Weaver Jr.	30
How Run'Round's sound is accomplished	
BASIC Training/Fred Blechman	44
Falling back for a look at screen formatting	
Mastering MS-DOS/Danny Humphress	52
Continuing our investigation into EDLIN	
The Lotus Petal Envelops The Sanyo/Charlotte & Brian Stone ...	72
A look at the new Video RAM Board	

DEPARTMENTS

Advertisers Index	78
Business Sector/Charlotte & Brian Stone	68
Answers to questions on applications programs	
Clubs, Clubs, Clubs	50
Input/Output/Tim Purves	37
Answers to your technical questions	
Letters To The Editor	6
Racksellers	77
Soft Talk	66
New products and services	
Submitting Material	12
Subscription Information	78

REVIEWS

Copylink	57
FreeForm	56
My Word!	62
Picture-Puzzle	64
ProportionalStar	59
Screen Print	61

Cover photo copyright© 1984 by Christopher Clor

Sanyo users get a NEW software deal . . .

NOW, Your Sanyo can Write Programs for You

Your computer is fantastically fast...once it knows what to do. You probably realize that a computer is the combination of hardware and software, working together smoothly, to give you what you want. Either one alone is useless. Software is really the key...the "mind" of a computer system. Every project or task you want to do requires a new specific software application to make your computer behave exactly the way you desire.

Of course you may be able to "force fit" your application into some existing canned package you have, but to really be flexible you need a separate program for your special purpose.

Until now, that meant you were forced to pay money for application software off the shelf, or if you could afford it, have it custom written for you, or if you were qualified, do it yourself...spending endless hours figuring it out and writing it. **Now, your computer can write individual application programs for you.** These programs are each separate, unique software programs that run in the standard BASIC on your computer.

Programs Without Programming

ICR FutureSoft has released the **NEW** and improved version of automatic program writers called **QUIKPRO+II**. It is a program that actually writes separate BASIC Programs for you...to do exactly **what you want to do**. And it's **simple and easy to use...you create a new program in minutes instead of hours.**

You can quickly generate a new program when you want it. You can generate thousands of different unique programs, each one standing alone as a complete program that runs in BASIC. Best of all, **you do not have to be a programmer to use it.** The QUIKPRO+II software becomes your personal programmer, waiting to do your work for you any time of day or night you choose to use it.

The All-In-One Program

The custom programs you can generate from the new QUIKPRO+II will let you perform Personal Filing, Fast Data Retrieval, including Changes, Deletions and Searches. You can selectively Print Custom Letters, all kinds of forms (if you have a printer). This new feature is called **Free Form Reporting**. You can even include calculations in the programs you create. QUIKPRO+II is perfect for creating inventory programs. You can use QUIKPRO+II to prepare letters and selectively address the letters to only certain people. And of course you can **SORT** your reports so that they print out information in the order that you want it, or print out only certain information. In fact, you can actually use QUIKPRO+II to create an easy to use Data management program or a simple spread sheet. You can do all of this and more with this All in One program...and the best part is that **you need no BASIC programming experience.**

How Does It Work?

You can do it simply by answering easy questions that appear on your screen. You won't have to learn any Computer commands or special Programming Languages. Instantly the QUIKPRO+II software instructs the computer to write efficient error free, BASIC Programs and puts the **Programs right onto your own disk, ready for you to use.**

The resulting custom program is truly a separate BASIC program. You can list it. You can modify it. You can customize it to your own liking. You can actually see what makes it tick.

User Proven and Widely Used

QUIKPRO Software is **used worldwide in thousands of sites** by executives, schools, small businesses, universities and major companies like: Johns Hopkins

University, Chicago State, U.S. Dept. of Agriculture, General Electric, Duracell International, Ford Motor Company, Westinghouse United Technologies, American Express, University of Pennsylvania, City of New York and many, many more.

Read What Users Say. . .

From a GENERAL CONTRACTOR/CONSTRUCTION COMPANY owner:

*"The program seems to be good and I must compliment you on the documentation. It is the **best** of its kind that I have seen."*

From an INSURANCE AGENCY MANAGER:

"I would like to compliment you on an excellent...program."

From a HOBBIST USER out in Oklahoma:

*"I thought I would drop a quick note about QUIKPRO. I have it running and it **will do** what I bought it for. I am very pleased with it..."*

This from a Vice-President of a Federal Savings & Loan:

*"In the past several weeks, I have used QUIKPRO software on four **different** programs. I am pleased with the results achieved so far and with your help over the telephone."*

Special Sanyo Deal

Sanyo users can get QUIKPRO+II direct at the introductory price of \$74.50 plus shipping and handling with a special 10 day satisfaction guarantee from delivery. You can order now by calling TOLL FREE 24 hours daily 1-800-824-7888, ask for operator 441. In California call 1-800-852-7777, operator 441.

Specify your Sanyo Model.

Send mail orders to:

ICR-FutureSoft, 1718 Kingsley Ave., P.O. Box 1446-SA, Orange Park, FL 32073

Dealer inquiries call (904) 269-1918
QUIKPRO+II is also available on IBM-PC, TRS-80, CP/M 8" and Osborne.

MULTILINGUAL INTEREST

Editor:

Here, a short comment on one article: J. Weaver Jr.'s *Font* program is precisely what I've wanted to do with the machine as long as I've had it. He apparently had the information I couldn't get, such as a memory map. His program works beautifully, but it's awfully hard to follow. A few comments would have been much appreciated.

I realize that the majority of your readers are BASIC hackers, but I beg you not to forget the rest of us. I'm sure plenty of Sanyo owners have gotten Borland's Turbo PASCAL. I use the DeSmet C package with my Sanyo and am quite satisfied with it. Probably many others use the Microsoft macro-assembler.

Also, please try to give us as much technical info as possible. The more we know about the innards of the machine and its software, the more we can do with it.

Now, for anyone who may need it, here's some of the info I've gathered so far. The *MS-DOS Programmer's Reference* is available for \$49 from Sanyo at 51 Joseph Street, Moonachie, NJ 07074. I understand that Eagle publishes the Microsoft internal reference manual for the Eagle PC. That may also be of help. If you want a cheaper reference, try *Programmer's Guide to MS-DOS for the IBM PC*, by Dennis N. Jump (Reston Publishing, 11480 Sunset Hills Road, Reston, VA 22090).

Now, about DeSmet C on the Sanyo 550/555; the compiler and binder are ready to go right out of the box, but the editor and debugger will crash the system. To get them running, use the example given in the comments in the file *CONFIG.C* on the distribution disk, but instead of compiling *CONFIG.C* and binding it with the other routines, just assemble *PCIO.A* (with *asm88*) and bind it in. The resulting *.EXE* file will run fine on the Sanyo. Note also that you can include the "flip" option in the debugger when you bind it.

Thanks for supporting the Sanyo 550 and its users.

David Roden
Stow, OH

Editor's Note: We don't intend to forget our readers who are interested in languages other than BASIC, and we will have articles and programs for PASCAL and C sprinkled through future issues. Our emphasis must remain on BASIC, however. It has the very important advantage of being bundled free with the Sanyo 550 series, so we know that all of our readers have it.

By the way, J. Weaver Jr. has placed a revised version of the *Font* program in the XA9 database of CompuServe's IBM PC SIG. This new version, we understand, sets *DOSPTR* and *SCRPTR* automatically, has a routine to speed up the initial font display, and the *.COM* file created will now work on any DOS instead of just the version it was edited on. Besides *FONT.BAS*, there is also a file, *FPASS.BAS*, which installs a sample font, and *FPMAKE.BAS*, a program that will create an *FPASS* program from your own *.DAT* file so that your font can be uploaded as an ASCII text file — Mr. Weaver's excellent solution for a means by which users can exchange their font creations.

OOPS!

Editor:

With no dealer support even remotely near, SOFT SECTOR is especially welcome. Help me out, please. In his column in the September issue ["Mastering MS-DOS," Page 33], Danny Humphress says, "Hard disk users have MS-DOS stored on their hard disk, so they don't even need a floppy disk." The mail-order dealers and manufacturers that I've talked to all say you can't boot from the hard disk. How does Danny do it?

Roger W. Lovett
Topeka, KS

Editor's Note: The dealers that you've spoken to are correct — you can't boot the system from a hard disk.

Danny apparently had another machine on his mind and it slipped past the rest of us. Sorry about that!

WE CARE

Editor:

Your return call to me was like a CARE package! After buying my Sanyo 555, I have gone from the heights of excitement to the depths of despair. There seems to be so little software and support for this computer. Thanks in part to SOFT SECTOR, though, perhaps there is hope.

Are there any owners in the Indianapolis area who would like to start a users' group? It is clearly up to us to make the most of this modern technology. So take pen in hand and answer today. The future is up to you. [P.O. Box 48, 47362.]

Janet Milenki
New Castle, IN

THE MYSTERY CLOCK

Editor:

Last night, while experimenting in BASIC, I wrote a simple four-line program to display the time on the screen like a clock. When I went to save it using the command *SAVE"CLOCK"*, I got the error message "file not found." I was puzzled to say the least, since that really seems to be a disk error message rather than one which would appear in BASIC. Also, when I printed the *TIME\$*, it had reset to a much lower number, although not always back to zero. The clincher is that I can save the program using any other name without any problem in MS-DOS 2.11, and I can save it using the *CLOCK* filename in version 1.25 (MS-DOS). Any ideas? I can't find anywhere that the word "clock" is reserved in MS-DOS 2.11, and if it is, why would it reset the internal clock?

Drew A. Newman
Phoenix, AZ

Editor's Note: It took a bit of investigation, but we discovered our mysterious *CLOCK* lurking within *IO.SYS* (an invisible file that is a part

Continued on Page 26



 **SANYO** said:

"TLS is the best MS-DOS training we have seen" and asked us to configure it for their MBC550 & 555 Computers.

These Manufacturers Agree TLS IS BEST!!

AT&T, Compaq, Heath/Zenith, ITT, Sperry, Tandy, Visual & Wang

SANYO TRAINING BONUS PACK

A \$70.00 Value for only \$39.95

Includes TLS and TLS Tutor for WordStar/MailMerge

"TLS"

**A Disk Based Tutorial
for MS-DOS**

Graphics and text create a pleasant learning environment. Individual levels of training are selectable by First Time Experienced or Professional users. Training is hardware specific, enabling the user to define hard disk, single or dual floppy instructions. A reference guide leads first time users through getting started. All command subjects are summarized for easy review.

Retail Price \$39.95

"TLS Tutor-WordStar/MailMerge"

**Interactive Training on
Audio Cassette**

In less than an hour you will be using WordStar to create correspondence, mailing lists, form letters and all the other features of these powerful programs. Audio cassette training from Total Learning Systems lets you use the actual software not a simulation. TLS Tutor step-by-step instructions are as effective as if you had a private trainer, but much less expensive.

Retail Price \$29.95

Combined Price "Sanyo Bonus Pack" \$39.95*

TLS Tutor for CalcStar and InfoStar Special \$30.00 (\$60.00 value)

TLS for IBM-PC and PC Compatibles available from most Sanyo dealers and participating Heathkit, Entre and Computerland Stores.

Dealer Inquiries Invited

**PC America Dealers
Contact Your Representative**

305-485-6882

Total Learning Systems

3451 N.W. 55th Street
Ft. Lauderdale, FL 33309

**If Not Locally Available
order MC/VISA - UPS/COD**

See Us at The Sanyo Booth at Comdex

*With this graphics editor and a little artistic flair,
you can turn your monitor into a . . .*

Window on the World

by Dan Webber

If you've ever dreamed of seeing high-resolution graphics on your Sanyo and being able to mix them with your BASIC programs, in thirty minutes this BASIC program listing and your trusty Sanyo are going to make your dreams come true! What you used to call a "monitor" is about to become a "window on the world"!

What? You haven't got a joystick? Don't worry! No mouse either? No problem! *Sketch-It* needs only your keyboard and two BASIC commands that have been in your Sanyo all along. What's more, since *Sketch-It* uses only standard Sanyo BASIC commands, anything drawn using *Sketch-It* can be redrawn in any BASIC program by simply adding a seven line subroutine. Sound too good to be true? Well, read on.

In almost every article you read about the Sanyo MBC-550 series, somewhere, sometime, the author will use the word "powerful." This article is no different. In fact, if you have never used the BASIC command *GCURSOR* or seen it in operation, you will probably find yourself using that word more than once before this day is over. Even more important is the realization that Sanyo BASIC has an entire list of powerful graphics commands that are just waiting to be used by anyone who can program in BASIC. Applications of these commands are not just limited to drawing circles, squares and boxes. With a minimal amount of planning, you can create drawings and charts suitable for engineering and business applications in a fraction of the time that it would take you on the drafting table or drawing board. I wish I could honestly state that it was for this noble purpose that

(Dan Webber began his association with microcomputing in 1978 and is currently completing a degree in mechanical engineering at the University of Missouri in Rolla, Mo.)

Sketch-It was originally conceived, but alas, I'm afraid I must admit that it owes its creation to an almost fanatical desire to play the game of "Risk" on my Sanyo. This is no small task, actually, when you consider the importance that highly detailed graphics have to the game. Thirty-five minutes after *Sketch-It* was written, I had the beginnings of what I had been searching for — the map shown in Figure 1.

Sketch-It created the map by drawing lines between points which were indicated by using a built-in function called *GCURSOR*. *GCURSOR* puts a pair of cross hairs on the screen which you may then move with the arrow keys on your numeric keypad. The program requires that you select a beginning point for your drawing by pressing the RETURN key at some screen location indicated by the displayed cross hairs. Subsequent points will then be connected by lines to draw one continuous figure. To end this figure, and begin another at a different screen location, you simply press the RETURN key twice without moving the cross hairs. This will return you to the beginning menu. Other menu options allow you to erase the previous line segment drawn, or to quit the program and save your drawing to a disk file.

Enough talk, right? Let's get down to business and start setting free that artist that is hiding inside of you! I am going to offer a short explanation of what the program segments and lines are doing so that the techniques used can be adapted into your next program, whatever it may be.

Introduction And Set-Up

This portion of the program does exactly what the heading says. Line 160 clears the video screen, followed by a command to locate the cursor at the screen position column one, row one. The zero following the X and Y coordinates tells the Sanyo not to display a flashing cursor. Next, our "welcome" title is printed and we request our first

response from the user.

Have you ever wondered how the "Press any key to continue . . ." works? Well, take a good look at Line 210, because those two statements are all that is required to add that feature to any program you may write in the future. The command *INKEY\$* is one of those "powerful" functions I mentioned before. *INKEY\$* is a command which tells the Sanyo to scan the keyboard and see if there is any key being depressed. Combined with an *IF/THEN* statement, Line 210 tells the Sanyo the following:

```
IS=INKEY$ . . .
```

Scan the keyboard and if any key is being depressed, take whatever that character is and assign it to the variable *IS*. If no key has been depressed *IS* is assigned a null string value.

```
IF IS="" THEN 210 . . .
```

If the value of *IS* is equal to the null string, represented by two adjacent quotation marks with nothing between them, then go back and scan again.

In essence we have created a simple "loop" which will continue to scan the keyboard until someone presses a key. Pretty neat, right? But wait, there's more. Look at Lines 220 and 230. We have stored whatever key was depressed in *IS*. Well, let's even put that to work! In these two lines we check to see just what key was depressed. If that key was

a capital 'V' or a small 'v', we know that the user wants to view an old drawing already on disk. If the value of *IS* is 'D' or 'd', we know a new drawing or an update to an existing drawing is desired. Now look closely at the end of Line 230. The words *ELSE 210* are like the final frosting on the cake. This command, used as we have in conjunction with *IF/THEN*, tells the computer that if the key depressed wasn't any of those we checked for in the preceding *IF/THEN* statements to immediately go to Line 210 and scan again! This means you can press the 'J', '9', *INS/DEL*, *RETURN*, any key you want (with exception of *BREAK*) and the program will still continue its loop until you respond with exactly the 'V' or 'D' keys. A basic loop, a simple structure, and *shazam!* Goof-proof menus from now on!

Lines 240-290 use the *INKEY\$* again to determine whether the user wants to create a new drawing or add more figures to an existing drawing. If an existing drawing is chosen, the command *FILES "*"* will look at the disk and display a list of every file that has been created using *Sketch-It*.

Open Existing/Read New Drawing File

This is the portion of the program which requests the name of the file to be created or retrieved from the disk. Unfortunately, neither time nor space will allow the discussion that this portion of the program code rightly deserves. There are many books on the market

dealing with "random access files" which I hope you will investigate further. Or better still, find a friend who can explain them in person. That is what it finally took in my case. One important note here. If you want to call your drawing by the name "map," just type *MAP* and nothing else; the computer will take care of the rest for you. Lines 410 and 420 open the file and prepare the computer to either send or receive the data as a series of four numbers, each consisting of two bytes. Line 430 looks at the size of the file on the disk and determines the number of records that it contains.

Prepare Screen For Drawing

This section asks if the user would like a faint grid drawn across the screen to help in freehand drawing.

Program Control For *Sketch-It*

This is the main body of the program. All functions originate and terminate in the next few program lines. Line 550 will call the subroutine to draw the grid if it was requested. Line 560 will call the subroutine to redraw a sketch from the disk file if that option was chosen. Line 570 checks to see if the user only wants to view an existing file. If so, the subroutine to draw from a disk file is called and the drawing is displayed. Lines 590 and 600 then work together to smoothly and quickly return the user to the "welcome" screen.

Lines 630 and 640 request the user to make a choice of program options. 'D' will begin drawing a new line; 'E' will erase the last line segment drawn, even from a previously stored file drawing; and 'S' will terminate the drawing and save it to disk in its present state of completion.

If 'D' is chosen, the program branches to the "Draw" section. An 'E' sends the computer to the subroutine which will delete the last line drawn. Once again, this involves file manipulation which could easily comprise an article of its own. For this reason, the actual operation of Lines 930 to 1000 and Lines 1180 to 1300 will be left for another time and a simpler example. If an 'S' is typed, the computer checks to see if the drawing you are working on was one that previously existed on the disk. If so, it then updates that file and returns the user to the "welcome" menu. If other commands, such as *CIRCLE*, *PAINT*, *BOX*, *VIEW*, *GET*, *PUT*, etc., are used, this is the location for their branching also. At present we will only include the *LINE* drawing function of BASIC and leave the additional commands for another time.

Draw

This is the heart of *Sketch-It* and the home of our most powerful command. Line 770 contains the BASIC command *GCURSOR (STARTX,STARTY), (X1,Y1),2*.

The *GCURSOR* command is found on Page 3-113 of your *Sanyo Operator's Guide*. Surrounding it are various additional graphics commands: *CIRCLE*, *PAINT*, *LINE*, etc. *GCURSOR* is the key to easy operation of all these commands, as you will soon see.

The operator's guide does a fair job of

describing the syntax of the *GCURSOR* command. However, the included program refuses to run on my machine. The secret to the power of *GCURSOR* is its ability to report back to the computer the exact X and Y coordinates of any position on the screen that you indicate with the cross hairs that appear. Utilizing this ability, *Sketch-It* asks the *GCURSOR* command to obtain the beginning and ending points of a line to be drawn and then inserts them into the *LINE* command, which is described on Page 3-120.

Line 660 prints the message asking you to indicate the beginning point for the drawing. You may either press RETURN immediately or use the arrow keys on the numeric pad to move the cross hairs around the screen. If things move too slowly for you, pressing the TAB key will switch it into a faster mode, but you may have to switch back for fine movement to obtain the exact point needed.

Lines 730 to 760 are the lines that write the coordinates of the two points to the disk every time a line is drawn. If you are drawing and all of a sudden hear the drives come on, don't panic! Even though every line drawn sends the command to the computer to write its coordinates to the disk at that exact instant, the Sanyo tends to put them in its pockets somewhere until it has a good bunch of them and then writes them to the disk all at one time.

The actual program lines do make careful use of variables and structure to make sure that the ending point of the last line drawn is automatically con-

verted to the beginning point of the next line to be drawn. Since each line is connected to the preceding line, in order to draw separate figures it was necessary to determine a way to tell the computer to stop this sequence of connected lines

*"You are about to set
your Sanyo free to be
the graphics machine it
was designed to be."*

and begin another figure at a different position on the screen. Line 700 accomplishes this by looking at the coordinates of the point chosen and comparing it to the beginning point of the line it was preparing to draw (i.e., the ending point of the last line drawn). If they are the same point, or in other words, if you hit the RETURN key twice without moving the cursor, you are transferred back to the main menu. To begin a new figure, just press 'D' and you are drawing again!

Basically, that is all that *Sketch-It* does. No special programming, no machine language coding, just simple BASIC commands that have existed all along in our own operator's guide. The few minutes that it will take you to type in this program could well be the most rewarding that you have ever spent with your Sanyo.

A few hints on its use might include some type of "tracing" pattern to be

used for intricate or detailed drawings. To reproduce the world map of Figure 1, I traced the pattern onto a sheet of clear plastic which I then taped onto the monitor's screen. This worked great, even allowing the "boot" of Italy to be drawn correctly.

To call any of your completed drawings into another BASIC program, use this short subroutine (change your file name accordingly in Line 5000):

```
5000 OPEN "R",#1,"MAP.SKT",8
5005 FIELD #1,2 AS X1$,2 AS Y1$,
      2 AS X2$,2 AS Y2$
5010 RECORD=LOF(1)/8
5020 FOR LOOP=1 TO RECORD:
      GET #1,LOOP
5030 X1=CVI(X1$):Y1=CVI(Y1$):
      X2=CVI(X2$):Y2=CVI(Y2$)
5040 LINE (X1,Y1)-(X2,Y2),7
5050 NEXT X:RETURN
```

To add that final touch to our drawings, the *PAINT* command is needed. We have the tools to not only implement *PAINT*, but also *CIRCLE*, *BOX*, *GET*, *PUT*, *VIEW* and any combination. All that is required is a pair of X,Y coordinates and *GCURSOR* will supply those with ease.

Are you ready to start? Then get a good grip on your keyboard. You are about to set your Sanyo free to be the graphics machine it was designed to be, and your programs are never going to be the same again.

Next month, we will offer enhancements to make *Sketch-It* even more powerful.

The listing:

```
10 ' *****
20 ' *
30 ' * SKETCH-IT Hi-Resolution Graphics For
40 ' * SANYO MBC 550
50 ' *
60 ' * September 28, 1984
70 ' * Rolla, Missouri
80 ' *
90 ' * Dan Webber Galen Oellig
100 ' * 314-364-3404
110 ' *
120 ' *****
130 :
140 ' INTRODUCTION AND SET-UP
150 '
160 CLS
170 LOCATE 1,1,0
180 SYMBOL(80,10), "Welcome to SKETCH-IT",3,3,6
```



```

190 LOCATE 9,16
200 PRINT "Do you want to VIEW or DRAW or QUIT ?"
210 I$=INKEY$:IF I$="" THEN 210
220 IF I$="V" OR I$="v" THEN SEE=1:GOTO 310
225 IF I$="Q" OR I$="q" THEN CLS:END
230 IF I$="D" OR I$="d" THEN 240:ELSE 210
240 PRINT :PRINT "Will this be a NEW drawing or an EXISTING drawing ?"
250 I$=INKEY$:IF I$="" THEN 250
260 IF I$="N" OR I$="n" THEN 370
270 IF I$="E" OR I$="e" THEN 290
280 GOTO 250
290 LOCATE 18,10
300 EXISTING=1
310 PRINT :PRINT "SKETCH-IT files on this disk are:":PRINT
320 FILES "*. "
330 GOTO 380
340 :
350 ' _____ OPEN EXISTING/CREATE NEW DRAWING FILE _____
360 '
370 STARTX=300:STARTY=100
380 PRINT
390 INPUT "Enter file name (maximun 8 characters):"; FILE$
410 OPEN "R", #1, FILE$,8
420 FIELD #1,2 AS X1$,2 AS Y1$,2 AS X2$,2 AS Y2$
430 RECORD=LOF(1)/8
440 '
450 ' _____ PREPARE SCREEN FOR DRAWING _____
460 '
470 PRINT "Do you want a grid overlay on the screen ?"
480 I$=INKEY$: IF I$="" THEN 480
490 IF I$="Y" OR I$="y" THEN GRID=-1 ELSE GRID=0
500 CLS
510 '
520 ' _____ PROGRAM CONTROL FOR SKETCH-IT _____
530 '
540 COLOR 1,0
550 IF GRID=-1 THEN GOSUB 1100
560 IF EXISTING=1 THEN GOSUB 1020
570 IF SEE<>1 THEN 630
580 GOSUB 1020
590 LOCATE 25,10,0:PRINT STRING$(70,32);
595 SYMBOL(40,190),"Press any key to erase display and return to opening screen.
",1,1,3
600 I$=INKEY$:IF INKEY$="" THEN 600
610 RUN
620 :
630 LOCATE 25,10,0:PRINT STRING$(60,32);
640 LOCATE 25,10,0:PRINT "D = Begin new line drawing      E = Erase last line draw
n S = save";
650 I$=INKEY$:IF I$="" THEN 650
660 IF I$="D" OR I$="d" THEN 750
670 IF I$="E" OR I$="e" THEN GOSUB 930:GOTO 790
680 IF I$="S" OR I$="s" THEN 700
690 GOTO 650
700 IF WIPE=1 THEN GOSUB 1180:GOTO 590:ELSE CLOSE: GOTO 590
710 GOTO 650
720 :
730 ' _____ !! DRAW !! _____
740 :

```




The Quick Silver Fox™ Jumps Over The Big Blue Dog.

We really hate to pick on the big guys but compared to the Silver Fox your basic IBM-PC™ is a slow, overpriced dog.

256k RAM

Why? Well, for starters, your basic Silver Fox comes with 256k of RAM which acts like a disk drive so that more of your software is accessed at the speed of light rather than the speed of a mechanical drive head.

1.6 Megabytes

You also have more than twice as much software to access because the Silver Fox comes with dual 800k disk drives for a total of 1.6 Megabytes. Yet the Silver Fox can read and write to all popular PC formats.

14 Free Softwares

1. MS-DOS
2. HAGEN-DOS™
3. M-DISK
4. WordStar™
5. EasyWriter
6. DataStar
7. ReportStar
8. FILEBASE
9. CalcStar
10. Color Graphics Basic
11. MailMerge
12. SpellStar
13. 10 Games, graphics and utilities

The best free software bundle in the business, and the Fox will run many programs written for the IBM-PC like dBase II and Multiplan, and programs written for Sanyo's new MBC-550 series.

Reliability

Because the Silver Fox is born on a totally automated production line in Japan it is inherently more reliable than

systems built by hand. The Fox is burned and tested for 14 days in Japan, and further tested after final assembly here in the good old U.S.ofA.

One Year Warranty

The Silver Fox is built better so we can back it with a limited, one-year warranty, four times longer than IBM. We're Scottsdale Systems and since 1980 we've shipped over \$10,000,000 of microcomputer equipment directly to microcomputer users.

Because we deal directly with users, we think we have a better idea of what you want. So the Silver Fox includes graphics with twice IBM's resolution, a printer port, a keyboard with a big return key, and a 12", high-resolution monitor as standard equipment.

Of course, you could spend \$4729 at Computerland for an IBM-PC that will perform almost as well as a Silver Fox. But why bother when you can call

1-800-FOR-A-FOX

and get your

\$1398

to perform like \$4729?

For additional information call 1-800-367-2369, or in AZ, AK, or HI call (602) 941-5856. Or write Silver Fox Computers, 617 N. Scottsdale Road #B, Scottsdale, AZ 85257.

IBM-PC price is based on a phone quote from the Mesa, AZ Computerland on July 30, 1984. Price included 256k RAM, dual 360K drives (800K's weren't available), software, and a graphics monitor.

Trademarks: Silver Fox and Hagen-DOS, Scottsdale Systems Ltd. IBM-PC, International Business Machines Corporation, Wordstar, Calcstar, Mailmerge, Spellstar, and Infostar, Micropro International, MS-DOS, Multiplan, Microsoft Corporation, Filebase, EWDP Software, Inc. dBASE II, Ashton-Tate.

Ordering: Telemarketing only. Silver Fox price is for cash, F.O.B. Scottsdale, price subject to change, product subject to limited supply. Visa, Mastercard add 3%, AZ residents add 6%. Returned merchandise subject to a 20% restocking fee. Personal/company checks take up to 3 weeks to clear. No C.O.D.'s or A.P.O.'s.

Submitting Material To SOFT SECTOR

Contributions to SOFT SECTOR are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

FORMAT: Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550/555. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

WHAT TO WRITE: Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, SOFT SECTOR, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.


```

750 LOCATE 25,10,0:PRINT STRING$(60,32);
760 LOCATE 25,10,0:PRINT"*****  Select initial point from which to begin drawin
g *****";
770 GCURSOR(STARTX,STARTY),(X1,Y1),2
780 LOCATE 25,10,0:PRINT STRING$(60,32);
790 LOCATE 25,10,0:PRINT"*****          Press enter twice to stop drawing
*****";
800 GCURSOR (X1,Y1),(X2,Y2),2
810 IF X2=X1 AND Y2=Y1 THEN 630
820 LINE (X1,Y1)-(X2,Y2),7
830 LSET X1$=MKI$(X1):LSET Y1$=MKI$(Y1):LSET X2$=MKI$(X2):LSET Y2$=MKI$(Y2)
840 X1=X2:Y1=Y2
850 RECORD=RECORD+1
860 PUT #1,RECORD
870 GOTO 790
880 :
890 :
900 :
910 '***** SUBROUTINE STORAGE AREA *****
920 :
930 WIPE=1
940 STARTX=X1:STARTY=Y1
950 IF RECORD<=0 THEN RECORD=1
960 GET #1,RECORD:'          *** ERASE LAST LINE DRAWN***
970 X1=CVI(X1$):Y1=CVI(Y1$):X2=CVI(X2$):Y2=CVI(Y2$)
980 LINE (X1,Y1)-(X2,Y2),0
990 RECORD=RECORD-1
1000 RETURN
1010 :
1020 FOR X=1 TO RECORD
1030 GET #1,X:'          *** DRAW FROM .SKT DISK FILE ***
1040 X1=CVI(X1$):Y1=CVI(Y1$):X2=CVI(X2$):Y2=CVI(Y2$)
1050 LINE (X1,Y1)-(X2,Y2),3
1060 NEXT X
1070 STARTX=X2:STARTY=Y2
1080 RETURN
1090 :
1100 FOR Y=0 TO 200 STEP 5
1110 LINE(0,Y)-(620,Y)
1120 NEXT Y:'          *** DRAW GRID ***
1130 FOR X=0 TO 620 STEP 10
1140 LINE(X,0)-(X,199)
1150 NEXT X
1160 RETURN
1170 :
1180 CLOSE #1
1190 OPEN "r",#1,"temp.fil",8
1200 FIELD #1,8 AS TCOPY$
1210 OPEN "r",#2,FILE$,8
1220 FIELD #2,8 AS COPY$:'
1230 FOR X= 1 TO RECORD:'          *** SAVE CORRECTIONS MADE TO ***
1240 GET #2,X          *** AN EXISTING .SKT DISK FILE ***
1250 LSET TCOPY$=COPY$
1260 PUT #1,X
1270 NEXT X
1280 CLOSE
1290 KILL FILE$:NAME "temp.fil" AS FILE$
1300 RETURN
1310 :

```

*Windows
on the
World*



EDUCATIONAL SOFTWARE

SPACE SHUTTLE

Why wait to become an astronaut? Play Space Shuttle and blast off on an adventure that will take you out of this world. Space creatures, satellites and other creepy things await you in outer space. But the real fun begins when you try to come home! Assembly Language.
\$29.95



BYTE BUSTERS

You are the BYTE-BUSTER. Your mission is to clear all of the "bytes" from the maze. Hampering your mission are three dangerous "Nybblers". These three foes are out to put the bite on YOU. Fun game written in Assembly Language.
\$29.95

"SOFTWARE MADE ON AND EXCLUSIVELY FOR THE SANYO MBC-550 SERIES COMPUTER"

WITH OLYMPIC EDUCATIONAL SOFTWARE YOU CAN WORK.....

OES INVENTORY

Designed for ease of use while still providing many features. Automatic reorder list, turnover, last date sold. Holds 1200-2200 accounts. 256K memory required. Cash register function prints receipts, sales totals, salesperson's commission and 9 departments.
\$99.95

OES ACCOUNTS RECEIVABLE

Complete billing system. Prints statements of account on computer or preprinted forms, ages accounts, finance rate chart, minimum payment chart. Holds up to 500 accounts. 256K memory required. Secure audit trail. Integrates with Order Entry & General Ledger.
\$99.95

OES ORDER ENTRY

Invoicing with computer or preprinted forms. Integrates with the Inventory and Receivable programs to provide a complete sales system. Sales Journal records daily sales, C of GS and GPM. Automatic Back Order function. 256K memory required.
\$99.95

OES GENERAL LEDGER

Income Statement and Balance Sheet. Holds 500 accounts. Accommodates one or several divisions or companies. Audit trail. Trial balance. 256K memory required. Integrates with Receivable, Payable and Order Entry. Chart of Accounts. Easy to use and set up.
\$99.95

OES ACCOUNTS PAYABLE

Tracks one-time and recurring payables. Holds up to 500 accounts. Integrates with General Ledger. Prints checks; you set the format. An optional voucher system is included. 256K of computer memory is required. Easy to use and understand. Menu driven.
\$99.95

OES PAYROLL

Computes payroll for up to 100 employees. Printer required. Prints checks and employee pay slips. Computes local, state and federal taxes for any pay period. Salaried, hourly or piece work pay rates. Each employee has a file with employment information.
\$99.95

MONEY ANALYSIS

Two amortization calculations. Mortgage analysis. Interest on savings. Installment payments. Great for real estate investors or anyone who needs to calculate payments. Menu driven and easy to use.
\$39.95

POSTMASTER II

Complete mailing list. Easy to use. 750 to 1500 name capability. Sort by name or zip code. Formats labels for any size. Great for computer rolex cards. These and other features make this a great program.
\$49.95

APPOINTMENT BOOK

Plan appointments from now until 1999 with this program. Excellent graphic calendar for each month. Print out a list of appointments for each day. Data disk included. Great for work or home use.
\$39.95

FINANCE MANAGER

Works like an accounts payable program, but for the home. Keeps track of items you want to include for your taxes. Program also comes with a graphic calculator and budget helper functions.
\$39.95

.....OR PLAY.....

TRIVIA MANIA

The hottest new trend in games has gone computer! Up to six players travel the computer game board answering trivia questions and trying to be the first to reach the Big Question. Different trivia question disks are available to keep this game exciting.
\$39.95

FLYBOY

Flying at 8500 feet, you discover that you have only 9 minutes of fuel left. Land your aircraft safely with the help of the air traffic controller. Graphic instrument panel and runway. Use with a joystick or keyboard. No pilot's license is needed to have fun!
\$39.95

BLACK JACK

Plays just like the real thing. Big, colorful graphic playing cards make this a very colorful game. You may take a hit, use insurance, double down or split. You set the bank at the beginning of the game and try not to go bust. Never a boring minute with Black Jack.
\$29.95

.....OR LEARN.....

TOUCH SKILLS

A complete typing tutor for the beginning to intermediate typist. First, you are taught finger positions and reaching methods. Then, you are drilled to increase your speed and accuracy. A graphic keyboard and game are included for your enjoyment.
\$39.95

BODY SYSTEMS

This program has superb graphics which detail four of the body's main systems. Skeletal, respiratory, digestive and circulatory. You may review each system and then take the quiz to become more familiar with the many different parts of your body systems.
\$39.95

STATES & CAPITALS

Learn each of the fifty United States by their shape. A section of the United States is drawn on the screen using excellent graphics and colors. You try to identify the state and then identify its capital. A fun program for becoming familiar with the U.S.
\$29.95

INCHWORM

This is a learning game for children and a strategy game for adults. Guide your long-growing inchworm through different learning situations to find the solutions. Children can learn and have fun in the lower levels. Adults must use skill in the high levels.
\$29.95

SPELLING BEE

Learn to spell with your own list of spelling words or use the computer's list of over 500 words. You can set the level of words you wish to spell. There are 12 skill levels to choose from. Make learning to spell fun for your children with Spelling Bee.
\$39.95

FLASH CARD

Flash Card was designed to sharpen your addition, subtraction, division, and multiplication skills. Large graphic numbers. Eight levels.
\$29.95

OLYMPIC
EDUCATIONAL SOFTWARE

1220 So. 356th Street, Suite 3D
FEDERAL WAY, WA 98063

CALL: (206) 874-4044 OR (206) 952-4114

WE ACCEPT MASTERCARD, VISA, AND AMERICAN EXPRESS (include card # and expiration date), CHECK, COD, OR MONEY ORDER. ALL ORDERS ARE SHIPPED UPS, FREE OF CHARGE. PLEASE ALLOW 4 DAYS TO RECEIVE YOUR ORDER. WASHINGTON STATE RESIDENTS, PLEASE ADD 7.8% SALES TAX. DEALER INQUIRIES INVITED. PROGRAM SUBMISSIONS WELCOME.



Operating Systems For The MBC-550 Series

An in-depth look at the available
software that controls your
computer and tells it how to think

Late last year, when the MBC-550 series computers were introduced, they came with single-sided, double-density, 5¼-inch floppy disk drives. Their operating system was based on Microsoft's MS-DOS 1.25, but their machine-dependent Basic Input/Output System (BIOS) supported only one format. This was the smallest of the four IBM PC compatible formats having 40 tracks with eight sectors per track for a disk capacity of 160K.

Now there are a great number of different operating systems available for the 550 series to support, not only double-sided, double-density drives in all four IBM PC compatible formats, but also quadruple-density and hard disk formats. The companies producing these operating systems include Sanyo itself, A-OK Computers, Greywolf Technologies, Key Software Products, MichTron, Thought Works Technologies, and U.S. Digital. The Key Software product allows CP/M-86 for the IBM PC/XT to be run on the 550 series with windows and single-sided disk formats that are IBM PC compatible. The U.S. Digital product emulates a 64K 8080 operating system in MS-DOS so that CP/M-80 programs can be run. The rest of the companies listed above provide operating systems based on either MS-DOS 1.25 or MS-DOS 2.11 that are improvements and/or enhancements of the original MS-DOS 1.25 operating system provided with the MBC-550 series.

This is a very healthy situation for

BY JON GEIST

owners and potential purchasers of MBC-550 series computers. Rather than being locked into the system configurations and operating systems provided by the manufacturer, they have a wider choice to more closely match their computing needs. This is one of the advantages of buying a computer that is popular, but it does cause a problem. How does one choose among all of the alternatives?

When I started to write this article, I hoped to be able to provide detailed comparisons of the various operating systems available for the 550 series. However, it became clear very early that it would take more work than I could devote to the project if the CP/M-based systems were included. Soon I had narrowed the scope of the article down to a comparison of MichTron's and A-OK's operating systems, but even this became too ambitious when both companies upgraded their product lines while I was comparing them. In the end, I settled on a less ambitious goal. This article attempts to present enough background information about the nature of disk formats and operating systems to allow you to make your own comparison of operating systems if you are considering either, 1) switching operating systems, or 2) upgrading from single-sided to double-sided drives, or from double-density to quadruple-density drives.

Except in the area of disk handling, the various MS-DOS-based operating systems are quite similar to one another, with two further qualifications. First, the operating systems based on Microsoft's MS-DOS 2.11 have some useful features that are lacking in those based upon Microsoft's older MS-DOS 1.25, but the cost of these features is a decrease in the speed of some functions. Second, some of the operating systems have one or two special features that are not available with all of the others. Depending upon the application that you have in mind, these special features may or may not be important to you.

The organization of the remainder of this article is as follows: First, I will present some background material about MS-DOS-based operating systems for the MBC-550 series computers and MS-DOS disk formats. Next, I will describe some of the more important special features that some of the operating systems provide. Finally, I will present a historical overview of the MS-DOS-based operating systems that are currently available from the companies listed above to give some feeling for the philosophy behind the evolution of their product lines.

The MBC-550 Series Operating System

The operating system that Sanyo provides with the MBC-550 series computers is called MS-DOS. It con-

sists of three programs that are contained on the system disk. These are *IO.SYS*, *MSDOS.SYS* and *COMMAND.COM*.

IO.SYS is called the Basic Input/Output System (BIOS). It was written by Tokyo Sanyo Electric (or a contractor) and its purpose is to provide an interface between *MSDOS.SYS* and the specific hardware used on the MBC-550 series computers.

MSDOS.SYS was written by Microsoft and its purpose is to supervise the running of other programs by keeping track of file-related information such as names and sizes, and deciding what sort of response is wanted when keystrokes are entered.

COMMAND.COM is the command processor that handles commands specifically associated with *MSDOS.SYS* and its supporting utility programs, such as *DISKCOPY.COM* and *CHKDSK.COM*.

The latter two programs are not, strictly speaking, part of the operating system, since MS-DOS can be used without them. This is not the case for *IO.SYS* and *COMMAND.COM*, which are essential to the operation of the operating system.

DISKCOPY.COM and similar programs are best thought of as utility programs that simplify or speed up the use of the MS-DOS operating system. (*FORMAT.COM* does not fit clearly into either category. Without it you cannot format disks — so saving files on new disks is not possible — but you can do everything else.)

There are two main reasons for dividing the operating system into pieces. First, it simplifies Microsoft's job to

have to write only the part of the operating system that will be identical for all machines, and that is what *MSDOS.SYS* consists of. Second, it simplifies software development for new machines if all of the machine-dependent functions are taken care of in *IO.SYS* and all applications programs are written using only the system calls supported by the machine-independent *MSDOS.SYS*. This would also assure a great deal of compatibility among different computers running MS-DOS.

Unfortunately, it takes more time for a program to request a function from *MSDOS.SYS*, which in turn requests it from *IO.SYS*, than for the program to request the function directly from *IO.SYS*. Thus, software writers have been bypassing *MSDOS.SYS* for any function that has a detectable delay between the function request and computer's response. This makes programs execute faster, but it has reduced the level of compatibility considerably below that expected when the MS-DOS operating system was under development.

Both *IO.SYS* and *MSDOS.SYS* are provided as hidden files on the various operating system disks available for the 550 series, while *COMMAND.COM* is provided as a visible file. This means that *COMMAND.COM* will be listed in the directory of files following a *DIR* command, but that *IO.SYS* and *MSDOS.SYS* will not. However, a *CHKDSK* command will return a message stating that there are two hidden files on the disk whenever *IO.SYS* and *MSDOS.SYS* are present. It is possible to make these files visible on your system disk, but we don't have time to go into that here.

The original MBC-550 series computers with single-sided, floppy disk drives were supplied with version 2.00 of *IO.SYS*, version 1.25 of *MSDOS.SYS*, and either version 1.17 or 1.17H of *COMMAND.COM*. The new MBC-550 series computers with double-sided drives are being supplied with later versions of all three programs. The new *COMMAND.COM* and MS-DOS programs are version 2.11, but the version number of the new *IO.SYS* program has been changed to 1.00, even though it is a later version.

The most important feature of *MSDOS.SYS* 2.11 that isn't available in *MSDOS.SYS* 1.25 is support for disk file sub-directories. This is a very useful feature in certain situations, but it does slow the system down considerably. Also, it is easier to add drivers to MS-DOS 2.11 than to MS-DOS 1.25, but again, there is a loss of speed associated with this feature.

As originally delivered, *IO.SYS* 2.00 had no *CONTROL-S* and *CONTROL-C* keystroke activated functions to stop scrolling and to cancel a command in progress, respectively, when working in the operating system. However, it is quite simple to fix this bug and most of the later versions of the new operating systems do support *CONTROL-S* and *CONTROL-C*.

Originally, companies writing new MS-DOS 1.25-based operating systems for the 550 were interested in adding machine dependent features like drivers for disk drives not supported by Sanyo. Therefore, in keeping with the MS-DOS design philosophy, they did not modify *MSDOS.SYS* or *COMMAND.COM*, but instead confined all of their

The **TMP** FreeForm Filer *No Other Program Can Match It!

OUR CAPABILITIES:

THE SYSTEM: This fully prompted, menu driven program, with "HELP" available at any point in the program, gives you real "EASE OF USE."

As you enter or edit your text, you can select any word as a "KEYWORD." You don't have to type your keywords separately! Each "CARD" can contain as many as 117 keywords, and up to nine pages of text similar to a 3" x 5" card, with no field restrictions! Each "FILE DRAWER" can contain up to 32,767 pages per drawer!

THE EDIT: "FULL TEXT EDITING," includes an onscreen editing menu, word wrap and the ability to move lines around in a file. Entire cards may be duplicated within a file drawer, making the use of "STANDARD FORMS" or "TEMPLATES" very easy!

THE SEARCH: You can "SEARCH" for the card title, your keyword, or a combination of both. "WILD CARD SEARCHES" give you even more powerful search capabilities, such as when you can't remember the spelling of a name!

THE RESULTS: You may list the titles of all cards found in your search, print those cards, or write them to a disk file for later printing or use with a word processor. Printing the cards gives you "HANDS ON USE" for maintaining office phone indexes, inventories, and appointment calendars. The FreeForm Filer *FILLS THE GAP* between traditional data base management and word processing programs!

The **TMP** FreeForm Filer

\$124.95



ORDERING INFORMATION:

Mail to:
TMP Software
2431 E. Douglas
Wichita, Kansas 67211

We accept: MasterCard, Visa, American Express, Money Orders and Checks. To speed up your order call toll free at 1-800-255-1382 Ext. 47.

TMP/Total Management Planning Software

GIVE YOU MORE ABILITIES

TO EASILY STORE AND RETRIEVE IMPORTANT INFORMATION HOW THE FREEFORM FILER IS USED

SMALL BUSINESS OWNERS: Inventory, service calls, vendor lists, sales orders, prospect notes, project status notes... the possibilities are endless!

RESEARCHERS: Put your research notes on the FreeForm Filer and you'll never have to worry about where your notes on the "XYZ Phenomenon" were filed!

ATTORNEYS: You can easily find the names of those cases affected by a new court decision, or cases that need briefs filed next month!

DOCTORS: You can list all of your patients affected by new medications!

IN THE HOME: Again, the possibilities are endless... stamp and coin collections, home inventory, payment dates, Christmas card lists, and all your favorite recipes *RIGHT AT YOUR FINGERTIPS!*

OUR PPD* RATING IS THE BEST IN THE INDUSTRY!

*PERFORMANCE PER DOLLAR: There are cheaper filing programs, but none with the power and performance of the FreeForm Filer.

*A REVIEW BY **SOFT SECTOR MAGAZINE** said no other filing program "can match the abilities and capabilities" of the TMP/FreeForm Filer for "applications that require a lot of text, very variable search criteria, speed and efficiency."

FOOTNOTES: Give the FreeForm to a friend for Christmas, and we'll send it directly to them with a special gift card!

The TMP FreeForm Filer runs on the Sanyo MBC 550 and MBC 555. (Also available for IBM-compatible computers, Zenith Z-100, Canon AS-100 and CX-1, Victor 9000, and Tandy 2000.)

SANYO COMPUTERS

Volksmodem
\$69.95

Flip n File 50
19.95

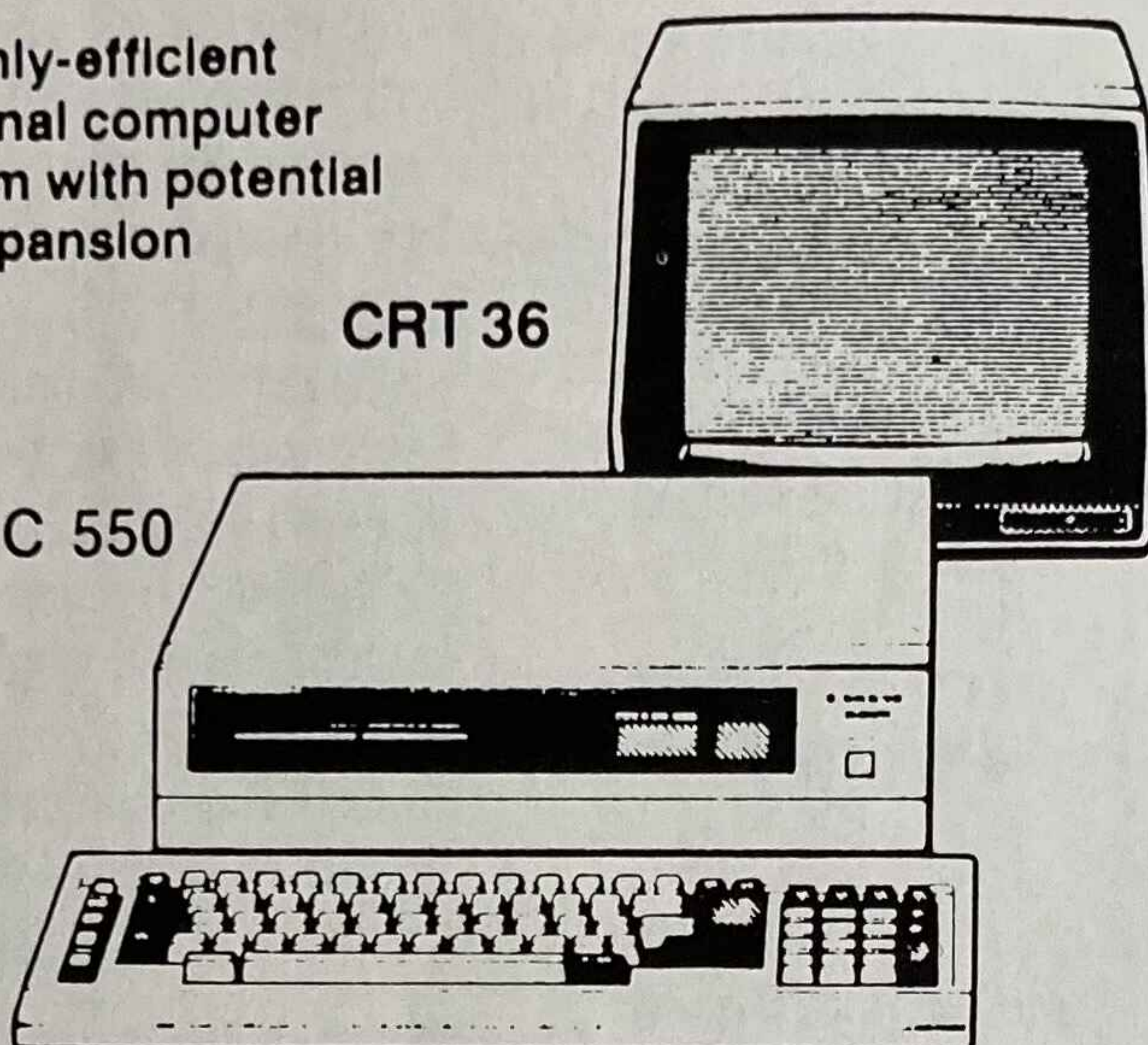
commodore
COMPUTER

High-Performance Computer System

A highly-efficient
personal computer
system with potential
for expansion

*MBC 550

CRT 36



- 16-bit 8088 CPU
- 128KB RAM, expandable to 256KB
- 160KB min floppy disk drive
- MS-DOS operating system
- Detachable keyboard
- Interface for Centronics parallel printer
- Built in Color Graphics
- 12" green phosphor CRT monitor
- 640x200-dot graphic display
- 80 charactersx25 lines

MBC 550
Sugg. List
~~\$999.00~~

CRT 36
Sugg. List
\$199.00

\$799.95

G10X
\$289.95

Hayes
Smart 300
\$219.95


**TEXAS
INSTRUMENTS**

ANCHOR AUTOMATION

PANASONIC
HAYES
STAR

1-800-845-8375

Prices Subject To Change without Notice

TEXAS
INSTRUMENTS
TEAC

Teac Double Sided Double Density \$179.95

Information Associates

4651 Abelia Ct.
P.O. Box 2207, Oak Grove Branch
Acworth, Ga. 30101
(404) 428-9050



30 and Counting

MichTron announces 30 of the best software packages you can find. . . with more arriving every day!

GAMES

Adventure Disk #2 \$39.95

Adventure Disk #3 \$39.95

Explore unknown lands, seek lost gold, or save the kingdom from complete destruction. All these journeys, plus many more, are possible with your trusty Sanyo and an Adventure Disk. Each Disk contains FIVE different, machine-language adventures.

CASHMAN \$34.95

Evade the byrds and kats in the quest for gold. Over 40 screens! Supports a simultaneous two player game for the most fun you can find: Great arcade-quality color and action.

DC-10 \$39.95

Hit the big, blue sky in a mighty jet. This realistic simulation uses a detailed instrument panel for learning and fun. An EXTENSIVE manual is included to introduce you to the world of commercial flying.

DEMON SEED \$34.95

Evade deadly bats and nasty demons on your way to destroy the mother ship. Super sound and arcade-quality action. Written in machine language.

EMPEROR \$34.95

Become a Ceasar and rule the mighty Roman Empire in this contest of complex strategies.

KING ARTHUR \$24.95

Climb the throne of Olde England on your way to immortality and history. Lead your loyal subjects against the ravaging Anglo-Saxons and expel them from Britain's sacred shores.

MAJOR MOTION \$29.95

Cruise the highways in search of high adventure. Run the enemy off the road on your way to the top score. Full color scrolling is used on this tremendous, totally new game.

MAZ \$24.95

Explore a world filled with random mazes and an unfriendly creature called "Kitty". Exciting 2 player option has twice the fun. 1 joystick needed (2 joysticks needed for 2 player game).

ROBOUNCE \$24.95

Aliens have invaded your Sanyo in this zesty space game of fast action.

SOLITAIRE \$34.95

The cards and chips are flying in this superbly animated card game. Play Solitaire, Klondike, Poker Squares, Cribbage, or even Blackjack.

TIC TAC TOE (3 dimensional) \$24.95

An old favorite meets a new computer in this match of wits. Play against the computer or a friend.

THUNDER CHIEF \$34.95

Take to the air in this 3-D bonanza. Great graphics and action. Requires 192K machine.

MichTron

576 S. Telegraph • Pontiac, Michigan 48053
Orders & Info: (313) 334-5700

FOR YOUR CONVENIENCE,
NOW AVAILABLE FROM YOUR
FAVORITE SANYO DEALER!

UTILITIES

DS DOS Plus \$49.95

Super charge your disk drives. Use any combination of 40 and 80 track drives. Store over 200K on a standard drive! Includes numerous utilities. Different versions for MS DOS 1.25 and 2.11.

M-DISK \$34.95

Get instant disk access with a RAM disk drive. Works with MS DOS 1.25 and 2.11, and all DS DOS's. Requires at least 192K.

MI-KEY \$34.95

Stop struggling with long, difficult commands. MI-KEY lets you redefine standard ASCII keys, plus 50 different control keys.

MI-TERM \$79.95

Your window to the world is here. MI-TERM is the COMPLETE communications system which is extremely powerful and easy-to-use.

PRINTER HELPER \$29.95

Sets most print features of Epson MX or MX compatible from DOS.

SOFT SPOOL \$34.95

Don't wait for your printer any longer. Soft Spool patiently prints while your Sanyo can do much more important jobs. 192K machine required.

SUPER ZAP \$49.95

Fix and edit any of your disks. Uses HEX and ASCII displays, plus help descriptions and single key commands.

TRANSFER \$59.95

Break the communication barrier between your Model I/III/4 disk and IBM MS DOS 1.0 disk. Completely menu driven.

BUSINESS PROGRAMS

Business Agreements \$49.95

These are 50 standard legal forms. Just load them into your word processor and add the needed information. Using just one form could save you much trouble and money.

Personal Money Manager \$49.95

You can now discard the stacks of papers and calculator tape. Keep accurate records of your finances and get the real picture.

Mighty Mail \$99.95

Very fast and easy to use, machine language mailing system. Makes the maximum use of disk space and has selectable data sorting.

Quick and Simple \$49.95

Create your own data base in 5 minutes with this super list manager. Has fast, user defined sorting.

Super CALC III for the Sanyo \$295.95

Zaps alone \$ 29.95

Convert one of the best spreadsheet programs for the IBM PC to work on the Sanyo.

GRAPHICS

Freeze Frame \$39.95

Printing any pictures or vital screen information is now a snap. You can even save your screen image to disk for printing later. Beautiful multi-shaded pictures available on dot matrix printers.

Graffiti \$39.95

If you can think of it, you can draw it with Graffiti. Even generates BASIC lines to redraw your masterpieces.

Master Graph \$89.95

Bar, line, pie, and even 3-D charts are no problem for this program. Includes a screen dump program for printer copies. Requires 128K for MS DOS 1.25 and 256K for MS DOS 2.11.

Picasso \$99.95

The ULTIMATE system for drawing on the Sanyo. Takes a minute to learn the controls, takes a lifetime to explore all their possible uses. Lets your creativity run free! Written totally in Machine Language for unbelievable speed.

changes to *IO.SYS*, *FORMAT.COM*, *DISKCOPY.COM*, and the bootstrap loader. More recently, some of the same effects are being achieved through resident drivers rather than modifications of *IO.SYS*. The latter option allows the original operating system to remain unchanged, but it introduces an extra shell into the command interpretation process with the inevitable increase in time to perform a given function. Indeed, the support of easy installation and removal of drivers is part of the difference in the design philosophy between MS-DOS 1.25 and 2.11, and the increase in time associated with the better support of drivers in 2.11 is imperceptible in some applications, but painfully obvious in others.

Before moving on to the overview of the various MS-DOS-based operating systems available for the 550 series, it is still necessary to say a few words about disk formats.

MS-DOS Disk Formats

The MS-DOS disk consists of four sections. The first is the bootstrap loader that brings the system to life when a disk is first inserted into drive A after the power switch has been pushed in. This program is written on every disk when it is formatted, but the system will not finish booting successfully unless *IO.SYS*, *MSDOS.SYS* and *COMMAND.COM* are also present on the disk as files.

The second section of every MS-DOS disk is the file allocation table (FAT). (Actually, there are two identical FATs on the disk in case one gets corrupted.) The FAT tells the operating system whether the disk has a single- or double-sided, double- or quadruple-density, eight, nine or ten sector format, and, using a chain of cluster addresses, the location of the files stored on the disk.

The third section of the disk is the directory of files. This section holds the name of each file stored on the disk, the first FAT address for each file, and other information about each file, such as its creation date and whether it is hidden or has been deleted.

The final section of the disk is the actual file storage area. The majority of the disk surface is devoted to this section, and increasing the effective area of this section by using both sides of the disk, or by writing in a more compact format (quadruple-density rather than double-density) increases the total amount of information that can be stored on the disk.

Double-density formats have 40 tracks on each side of the disk, while quadruple-density formats have 80 tracks on each side of the disk. Each track can have as many as 10 sectors per track. I don't know why IBM chose to use only eight sectors per track for the disk format supported by the original IBM PCs that came with single-sided drives. Nor do I know why they chose to add only one more, rather than the two more that are possible, when they went to double-sided drives. On the other hand, I do know why Sanyo made these choices. It was to be as compatible with IBM as possible.

It is important to realize that even though the amount of space allotted to file storage determines the maximum amount of information that can be stored on the disk, other factors can limit the actual amount stored to substantially less than this maximum. For instance, it is the amount of space allotted to the directory that determines the total number of files that can be stored on the disk. If all of the files are small, the disk may run out of room for file names before it runs out of room for file contents.

Diverse Features Of The Various Operating Systems

Examples of features that are not currently available in all of the operating systems that can be purchased for the MBC-550 series are support for sub-directories of disk files (available only with MS-DOS 2.11-based operating systems), print spoolers, "RAM disk" and screen dumps. Each of these, as well as other features not mentioned here, can save time in certain applications.

Sub-Directories

Sub-directories let you organize your files in a hierarchy of directories on your disk. To see how this works, imagine that you have divided all of your files into four main directories, 'A' for assembly language files, 'B' for BASIC files, 'C' for *CalcStar* files, and 'W' for *WordStar* files. When you wanted to use a *WordStar* file, you would type a command that sets 'W' as your main directory. If you then typed *DIR*, you would not have to root through all of your files looking for the *WordStar* files, because only these would be displayed. You could further divide your *WordStar* files among sub-directories, such as different subject areas, to make it easier to find the file of interest. This

PRICE CHECK

COMPUTERS W/SOFTWARE

550 (1 160K)	650.00
555 (2 160K)	855.00
550-2 (1 320K)	call for prices
555-2 (2 320K)	call for prices
555-4 (2 640K)	call for prices

ACCESSORIES for 550

160K drive	95.00
160K drive w/soft	259.00
320K drive	150.00
320K drive w/soft	355.00
640K drive	185.00
640K drive w/soft	435.00
RS-232C 550	59.00
Memory 128K 550	89.00
Auto modem 550	145.00
Telephone Kit 550	345.00
Joystick 550	39.00
12" hi-res green	97.00
9" hi-res green	85.00
12" RGB color	295.00

MAXELL	DISKS	TDK
19.95	SS/DD	19.95
24.95	DS/DD	24.95

PRINTERS config. for Sanyo

Panasonic	1090	215.00
	1091	269.00
Okidata	82A	285.00
	83A	519.00
	92P	365.00
	93P	575.00
	84P	665.00
Toshiba	1340	735.00
	1351	1245.00
Sanyo	PR-5000	396.00
	PR-5500	595.00
Silver Reed	400	265.00
	500	315.00
	550	395.00
	770	755.00
Abati	LQ-20	389.00
Juki	6100	389.00
Printer Cable		22.00

SOFTWARE * Send for List *

Ultimate (5 in 1)	159.00
CP/M-86 Oper. Sys.	90.95
Home Accounting	99.95
Accting System	350.00
Personal Pearl	234.50
Invest. Manager	169.95
Smartkey II	79.00
CP/M Emul. (550)	89.00
Radio Shack Emul.	59.97
Copylink	89.00
SanyoCom	85.00
Flight Simulator	45.00
Solitaire (game)	31.00
Cash Man (game)	31.00
Demon Seed (game)	31.00

SANYO SUPREME

2x800k DRIVES
256k - RS-232C
ULTIMATE (5 in 1)
SOFTWARE \$1349

Add 3% for Visa/MC
Cashiers Check, Money Order, Wire Transfer
accepted. No COD. Shipping/handling Additional charge.

SANYO CITY

1708 N.W. FEDERAL HIGHWAY
Stuart, Florida 33494

(305) 692-2455

(305) 335-5489

can also be achieved by proper choice of the first two or three characters in your filenames and extensions and wild cards in the *DIR* command, but this approach usually results in very cryptic filenames that take more time to decipher.

If your files tend to be so large, and your disk capacity so small, that all of the entries in your file directory fit on a single screen, sub-directories will not make your file handling any more efficient. On the other hand, if your file directories take up many screens, properly used sub-directories can probably save you a lot of time.

Sub-directories are probably a necessity for efficient use of hard disk drives with capacities of five or more million bytes of data. How useful they are for disks with less than one million byte capacities depends upon the application, and perhaps upon the style of the person using the computer. The trade-off here is the time savings that the use of sub-directories can provide versus the slower functioning of MS-DOS 2.11 relative to 1.25. There are certain applications where one or the other is clearly superior, and it is even possible that a single user might prefer to use a different operating system for different applications.

Print Spoolers

A print spooler lets you work on one task that is assigned a high priority while outputting files to your printer at low priority. To see how this works, imagine that you are listing a BASIC program on the printer in background (low priority) with the print spooler while you are writing another program under control of the BASIC interpreter/editor in foreground (high priority).

When you are listing the foreground program on the screen, the printing will stop completely, because the computer's resources are being completely absorbed by the foreground task. However, while the foreground task is idle waiting for you to enter the next program line, the printer is running full speed ahead printing out the listing of the other program.

Unless the spooler is very sophisticated, it transmits all ASCII characters to the printer that it finds in the file and may not produce the expected results with documents edited in *WordStar* or *EasyWriter*. Exactly what happens will depend upon your printer and what control characters are present in your *WordStar* or *EasyWriter* file.

A worst case scenario occurs with an Okidata Microline 92 printer that uses the ASCII ETX code (3) to switch it into the graphics mode, when attempting to print an *EasyWriter* file in which the ASCII ETX code was used to signal *EasyWriter* to switch to one of the optional Okidata print modes such as 12 characters per inch. The result is that the entire document following the ASCII ETX code is interpreted as graphics characters, and nothing useful, or even decipherable, is printed.

On the other hand, even a simple print spooler can be used quite satisfactorily with the right combination of printer and word processing program and/or a little care about what ASCII control characters are embedded in the document by the word processor.

RAM Disk

RAM disk takes a portion of the computer's memory and uses it to emulate another disk drive. This is convenient

when using certain programs such as *WordStar* that were designed to run on machines with small amounts of memory. To see how it works, imagine that you want to edit a document in *WordStar*. You would copy both the document of interest and the *WordStar* program files to RAM disk and you would find that *WordStar* ran much faster than what you were used to, because the "disk" access times for RAM disk are much faster than those for real disk drives.

When you were finished editing, you would save the contents of the revised file on a real disk because the contents of RAM disk are lost when the computer is turned off. Very substantial savings of time are available when using RAM disk for the right application in the right environment.

Unfortunately, the current memory limits of the MBC-550 series are somewhat small to allow RAM disk to be used to maximum advantage. Ideally, you would like to have enough memory available to make your RAM disk as large as your disk capacity. This requires a larger memory than the capacity of the disks, because there has to be room for the operating system and the resident part of *WordStar*, as well as the RAM disk. Nevertheless, RAM disk on the MBC-550 series can still save substantial amounts of time in many applications.

Screen Dumps

A screen dump outputs whatever is on the screen to the printer whenever the screen dump program is activated. To get an idea how this is useful, imagine that you had just attempted to run a new program and you received an

```
*****
*                               HOME FINANCE MANAGER                               $59.95      *
* The MOST COMPLETE HOME FINANCE package available. Step-by-step                  *
* USER GUIDE included. NO ACCOUNTING or COMPUTER EXPERTISE NEEDED !              *
* BUDGET/EXPENSE Section has 30 Categories- 28 you specify.                       *
* Handles CASH, CHECKS, CHARGES, CREDIT CARD, AUTO BANK WITHDRAWAL.              *
* Other Sections calculate IRA, MORTGAGE AMORTIZATION and more.                   *
* =====*
* PROFESSOR WHIZBANG'S WORD SEARCH                                             $24.95      *
* FAMILY FUN- Excellent LEARNING tool. Words randomly placed in grid.             *
* Use furnished Word Lists, or make up your own. A NEW game each turn-          *
* or SAVE the game and try to beat the best time. MANY skill levels.             *
* Become a CHARTER member of the PROFESSOR'S WORD SEARCH Club.                 *
* =====*
** ORDER YOUR COPY NOW ! USE CHECK, MONEY ORDER, or VISA/MASTERCARD **
*                               FRONTIER SOFTWARE, Inc.                          *
*                               P.O. BOX 108                                       *
*                               FRONTIER, MI. 49239                               *
*                               Phone: (517) 254-4441                             *
*****
```


error message that you did not understand. However, since you had an idea what might be wrong, you went ahead and made a change and received another error message when you attempted to run the revised program.

At this point, the screen is full of potentially useful information to help you debug the problem. But you don't want to pull out the manual yet, because you have another idea that you want to try. However, if you do, part of the useful information that is currently on the screen will be lost when it scrolls off the top. So you activate the screen dump, thereby creating a permanent record of the information contained on the screen for possible future reference, and try your third idea. If it works, you have saved the time of rooting through the manual without losing potentially useful information or copying it by hand, and if it doesn't work, you have a copy of exactly how the screen looked during your last two attempts to run the program.

Screen dump programs come in two types. The first type is called a character dump, and it prints an ASCII or extended ASCII character image of the screen. That is, the program reads the characters that are on the screen out of the character buffer in memory and sends them to the printer. The second type of screen dump, which is called a bit mapped dump, prints an exact bit-for-bit copy of the screen by reading the bits out of the portion of memory reserved for the screen. This type of dump only works with dot-matrix printers that allow each pin to be addressed individually. Its principle application is print-

ing graphics produced by the computer.

Character dumps are faster than bit mapped dumps, but character dumps can encounter the same type of problems with ASCII control characters that print spoolers do. On the other hand, character dumps work perfectly for all printers with ASCII files, while bit mapped dumps have to be written for the particular printer being used, because there is no single standard way that dot-matrix printers allow their pins to be addressed.

It should be clear that the only thing that these features have in common is that they are all designed to save you time. Clearly, they are all desirable, but to choose among them, you must have a particular application in mind. (It's hard to choose between a spoon and a shovel until you decide whether you want to dig a hole or eat some pudding.) Therefore, they are best covered in review articles that are restricted to the operating system that has the particular feature of interest.

Overview Of The Operating Systems

All of the companies that produce a new MS-DOS-based operating systems for the 550 series computers that I contacted told me that they were working on new, improved versions. Indeed, A-OK and MichTron gave me copies of their new systems for evaluation.

What follows is an attempt to describe the evolution of the MS-DOS operating systems for the 550 series up to their status at the time this article was

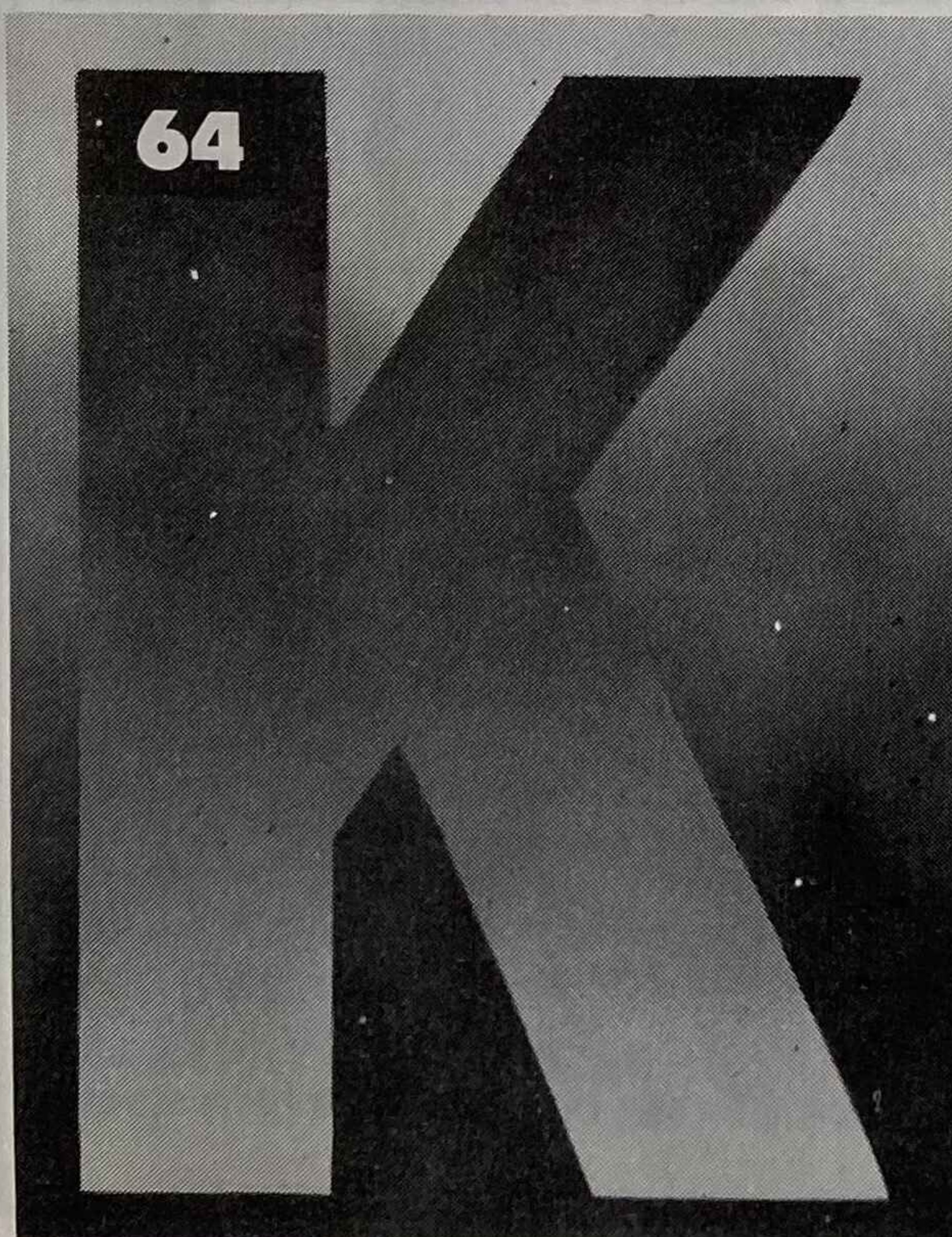
written. Owners of earlier versions of these operating systems may not have all of the features described.

Sanyo introduced their MS-DOS 1.25-based operating system late last

"Software writers have been bypassing MSDOS.SYS for any function that has a detectable delay . . . this makes programs execute faster, but it has reduced the level of compatibility. . ."

year at the U.S. debut of their MBC-550 and 555 computers. The version of *IO.SYS* supplied with MS-DOS 1.25 supported only single-sided, 40-track drives and only the 160K IBM PC compatible format. While Sanyo could have modified *IO.SYS* to support double-sided drives and other formats, they elected to postpone this feature until the introduction of the MS-DOS 2.11-based operating system for the 550 series. This does not mean that they had completely frozen the 1.25 operating system in anticipation of MS-DOS 2.11. For instance, they provided their dealers with free updates fixing minor bugs and adding missing features during the period that 2.11 was being ported to the 550 series.

Sanyo introduced their new MS-DOS 2.11-based operating system at the same time that they started to sell double-sided, 40-track drives in the 550 series. Somewhat later, they introduced an upgrade kit consisting of the new operating system and double-sided drives.



64K MEMORY \$69⁹⁵ per set

MBC550 series accepts up to two memory expansion sets—just snaps in!

More room for Basic and Calstar. Directions included.

Order two sets for \$125⁰⁰

TURBO PASCAL

Designed especially for micro computers. Very efficient, full code, includes editor. 8087 for heavy-duty number crunching.

Version 2.0 \$44⁹⁵
8087 Version \$89⁹⁵

8087

MATH CHIP

Math coprocessor speeds number crunching (must be supported with software like TURBO PASCAL). Snaps in—directions included. IN STOCK **\$195**
\$175 When buying TURBO PASCAL

TO ORDER send check or money order (no COD's) to:

PARKWYRTH SERVICES

638 Parkwyrth Avenue/Baltimore, MD 21218
(301) 235-7452
Add \$2.00 shipping and handling.

MichTron introduced DS-DOS shortly after Sanyo introduced the MBC-550 in the U.S. The original version was based on MS-DOS 1.25. It supported the IBM PC compatible 160K, single-sided, 40-track disk format that was recognized by the MBC-550 computers from Sanyo, but it also supported the IBM compatible 320K, double-sided disk format on double-sided drives. This operating system was then replaced by a new version of DS-DOS. It was also based on MS-DOS 1.25, but it added the IBM compatible 180K and 360K formats to the formats supported by the earlier version.

Next MichTron introduced DS-DOS 80, an operating system that supported both 40-track and 80-track drives. This system, also based on MS-DOS 1.25, could handle the 160K and 320K, double-density, IBM compatible formats on 40-track drives, and two quadruple-density formats on 80-track drives: a single-sided, 360K format, and a double-sided, 730K format.

Both DS-DOS and DS-DOS 80 were based on direct modifications of the original Sanyo BIOS, *IO.SYS*. However, as I am writing this article, Mich-

Tron is in the process of putting the final touches on its new line of operating systems that are based on carrying out certain BIOS functions with removable driver programs. This line is called DS-DOS PLUS, and it is available in an MS-DOS 2.11 version as well as a 1.25 version. I tested what I understand is the final 1.25 version.

DS-DOS PLUS 1.25 has a file called *CONFIG.COM* that is used to configure each drive (A, B, C or D) as either a 40- or an 80-track drive. On 40-track drives, it fully supports the four IBM PC compatible formats. On 80-track drives, it fully supports a 400K, single-sided format and an 800K, double-sided format. DS-DOS PLUS 1.25 also reads and writes the four IBM PC compatible 40-track formats on 80-track drives, but it cannot boot a 40-track disk on an 80-track drive.

You need a 40-track drive in A in order to install DS-DOS PLUS 1.25. If your B drive is an 80-track drive, you can make an 80-track system disk that will boot on an 80-track drive. To be able to boot the 80-track system disk on the same computer that you used to install DS-DOS PLUS, you replace the 40-track drive in A by an 80-track drive.

Unlike the earlier versions of DS-DOS, DS-DOS PLUS 1.25 does not ask for the time when it boots. Like the earlier versions, it does ask for the date when it boots and remembers it as long as the main power is not turned off, and it has a full character-sized cursor. DS-DOS PLUS 1.25 comes with an installable resident ASCII screen dump that is installed by typing *TEXT* and is activated by a shifted, CONTROL-0 keystroke. This screen dump allows you to reconfigure it in case you have reassigned different characters to different keystrokes.

The version of DS-DOS PLUS for MS-DOS 2.11 that I tested was a little bit different in some of its features than the 1.25 version described above. It is my understanding that the final 2.11 version will be more similar to the 1.25 version, so I won't describe the 2.11 version that I tested.

Soon after MichTron introduced their second version of DS-DOS, A-OK Computers released A-OK DOS. It was based on MS-DOS 1.25, and it supported the four IBM PC compatible disk formats on 40-track drives, but it also had a built-in ASCII screen dump and the provision to install graphics

FLOPPY STORAGE UP TO 3.2 MEG!!!

External Drive Kits

\$115. (\$85. with Drive Order)
Includes all Cables & Instructions.
Holds up to 2 Drives.

DISK DRIVES

TEAC SS, DD (200K) \$105.

TEAC DS, DD (400K) \$169.

TEAC DS, QD (800K) \$199.

Second Drive \$10. Less

1 YEAR WARRANTY ON ALL DISK DRIVES

TURBO PASCAL \$45.

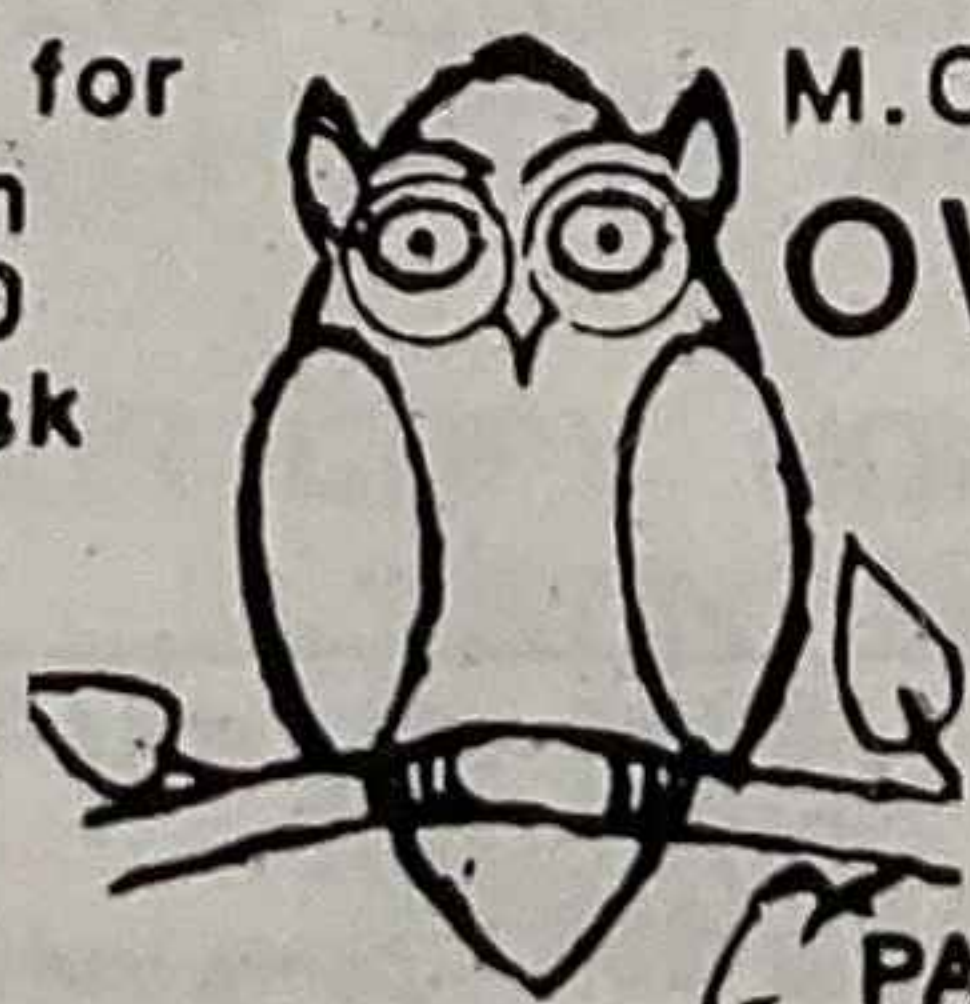
SANYO BASIC REF. MANUAL \$29.

Power Type

Letter Quality Printer \$395.

TOLL FREE ORDER LINE: 800 245-6228

NOTE: Add \$30. for
AOK DOS which
gives 8,9 or 10
sectors per disk
and up to
0.8 meg
per drive!!!



M.C. & VISA Accepted

OWL-Services

P.O. Box 116-D

Mertztown, PA.

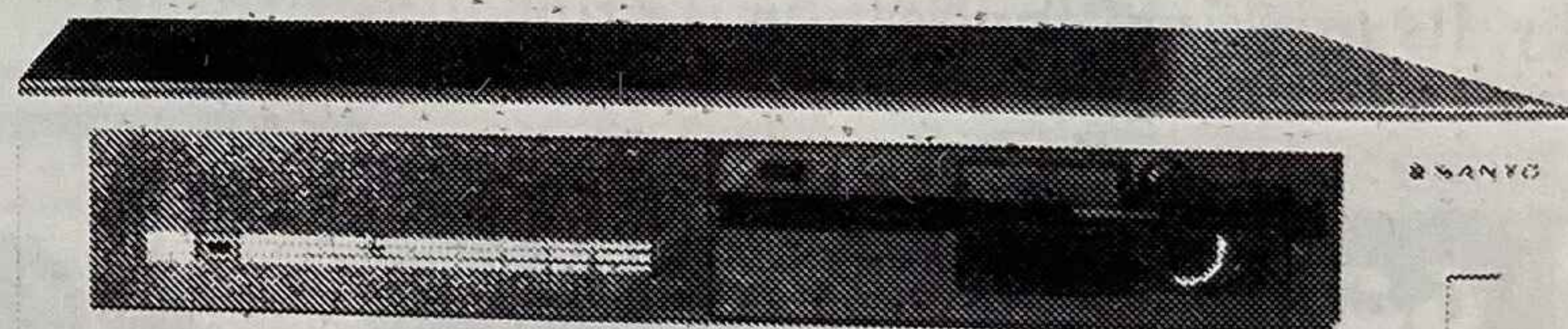
19539

PA Res Include 6% Tax
PA (215) 682-6855

800 245-6228

**NOW
AVAILABLE!**

**The Only Internal Hard
Disk Drive For The
SANYO 550**



Systems Peripherals Consultants is now providing the answer to your mass storage problems with fast access Winchester disk drives from 10 Mb. to 40 Mb. in a convenient *internal* installation or up to 480 Mb. in our external chassis.

We also provide removable Winchester drives with 5.4 Mb. capacity which double as both an on-line storage device and high speed backup. Installation requires only a screwdriver and takes about ten minutes, and we deliver from stock... not promises.

Call SPC now and ask for more information. Quantity and prepayment discounts are available.

SYSTEMS PERIPHERALS CONSULTANTS

9747 Business Park Avenue • San Diego, CA 92131 (619) 693-8611

dumps for some popular dot-matrix printers. The screen dumps were interrupt driven, so they could be called from programs as well as from the keyboard, and a short subroutine was provided to facilitate calls from BASIC. The ASCII dump was called from the keyboard by a shifted CONTROL-A keystroke. A-OK DOS also had a shifted CONTROL-S keystroke that stopped scrolling in the various applications programs the way that CONTROL-S does in the operating system.

In its new line of operating systems, A-OK DOS-1 replaces A-OK DOS. According to A-OK, the only significant change from A-OK DOS to A-OK DOS-2, 3 and 4 was the addition of a 10 sector format, but this required modifying the operating system in such a way that the graphics screen dumps available for A-OK DOS could not be installed in the new versions without destroying the operating system. Therefore, new screen dumps were written and given new names, and a new installation program that will not install the old programs was also written.

Like A-OK DOS-1, A-OK DOS-2 supports only 40-track drives, but besides the four IBM PC compatible for-

mats, it also supports two 10 sector formats: a single-sided, 200K and a double-sided, 400K format.

Like DS-DOS PLUS, A-OK DOS-3 fully supports 80-track formats on 80-track drives and 40-track formats on 40-track drives, and it does not format or boot 40-track disks on 80-track drives. Unlike DS-DOS PLUS, A-OK DOS-3 does not even read 40-track disks on

"From the point of view of 550 series users who now have, or are planning to get, 80-track drives, it would be better if a small set of formats were to emerge as standards so that all of the companies would have to support them."

80-track drives. It supports only 40-track formats on 40-track drives and 80-track formats on 80-track drives.

On 40-track drives, A-OK DOS-3 supports the same formats as A-OK DOS-2 and on 80-track drives, it supports two double-sided formats — a

730K and an 800K format. You need a 40-track drive in A in order to install A-OK DOS-3. If your B drive is an 80-track drive, you can make an 80-track system disk that will boot on an 80-track drive. To be able to boot the 80-track system disk on the same computer that you used to install A-OK DOS-3, you replace the 40-track drive in A by an 80-track drive.

Different still is A-OK DOS-4. It supports only 80-track drives, but it fully supports bo be installed on an 80-track drive. In fact, it can't be installed on a 40-track drive. A-OK DOS-4 supports the same disk formats as A-OK DOS-3.

Greywolf Technologies recently introduced their Super Sanyo Upgrade Kit, which consists of 80-track drives and an operating system to run them. The Super Sanyo operating system fully supports both 40 and 80-track formats on the 80-track drives with the exception that it can't boot from a 40-track disk. The Super Sanyo operating system is based on MS-DOS 1.25. As originally configured, it assigns logical drive A: to physical drive A, and logical drives B: through G: to physical drive B.

Oakwood Publishing Introduces Productivity Software For The SANYO MBC-550 / 555 Systems.

MINI-LEDGER

An accounting package for small business and personal use.

READING PROFESSOR

A speed reading course to increase speed and comprehension skills.

jrDESK

An integrated planning and organizational tool with window displays designed to help manage a variety of day-to-day activities including household budgeting, personal finances, and small business operations.

COMING SOON: jrFILE, NUTRI-CALC, DISCOVERY ENCYCLOPEDIA, LOGO PROFESSOR...AND MORE!

 **OAKWOOD**
P · U · B · L · I · S · H · I · N · G
1335 W. 134TH ST., GARDENA, CA 90247

ASK YOUR LOCAL SANYO DEALER FOR DETAILS.

SANYO **FOR LESS**

IBM to Sanyo—Run IBM BASICA Programs on your Sanyo—"Ready to Run"—We've done the work for you. Incredibly **only \$39.95.**

Supplement—Commands that Sanyo omitted from its 550/555 Operations Manual. A "must" for **only \$5.00.**

200+ Programs—Over 200 Sanyo compatible programs listed by category, program name, company name and telephone numbers. **Only \$4.00.**

Command/Assist™—Your DOS Manual on disk. There when you need it. Just type **HELP** and the command name. A **MUST** to have. **Only \$49.95.**

Keyboard Extension Cable—4' Extension Cable that connects your keyboard to CPU. **Only \$29.95.**

COPYLINK™—Communications software "ready to run" on your Sanyo. Complete flexibility and ease for **only \$79.95.**

CPeMULATOR™—Run CPM on Sanyo for **only \$79.95.**

Run Lotus? Now you can with the new video board and diskette package from Sanyo. Includes MS-DOS 2.11 and GW Basic. A giant stride towards IBM compatibility. Run many other IBM programs. December delivery. **\$199.00.**

Unprotect—Unprotects programs saved from Sanyo Basic. A "must" to have for **only \$54.95.**

Key Plus Program—Program over 3 dozen individual function keys. **\$19.95.**

Sanyo Music Box—Add music and sound to your Sanyo. Complete for **only \$29.95.**

Technical Newsletter—\$15.00 per year.

RS232—Serial Card—Communications Board. **Only \$69.95.**

Free Catalog—of all products available.

Sanyo Tutorial—Step-by-step instruction in the use and programming of Sanyo MBC 550/555 Computer. "Quick Start Bonus Pack" includes audio cassette training tape for Wordstar/MailMerge instruction. **Only \$43.95.**

128K Upgrade—Add 128K of memory for ½ the price. (150-NS) Complete at **only \$79.95.**

10 MB Hard Disk—Complete 10 MB Hard Disk Subsystem. **Only \$1495.00.**

Sanyo to Printer Cables—\$27.95.

Custom-Made Sanyo Computer Dust Covers—\$13.95 to \$29.95.

Modem Communications Package—Very simple, easy-to-use. Designed for Sanyo. **\$25.00.**

Kiwi Computer Bag—For safe computer transport. **\$69.95.**

★ **\$2.00 postage and handling charge** ★

★ COD orders extra ★

★ Dealers inquiries invited ★

★ Check, Visa, Mastercard and Money Order ★

BLOCK MARKETING, INC.
6009 Wayzata Blvd., Suite 102B
Minneapolis, MN 55416
(612) 546-3776

(Block Marketing is a recognized Sanyo Dealer.)
*MN residents must add 6% Sales Tax.

Each logical drive supports only one format as follows: A: and B: support an 800K format, C: through F: each support one of the four IBM PC compatible formats, G: supports the Tandy Model 2000 double-sided, 720K format, and H: supports the DEC Rainbow single-sided, 400K format. A menu-driven installation program allows these assignments to be changed.

The Greywolf operating system also comes with a disk format program that allows the sophisticated user to reconfigure his system to read other MS-DOS compatible formats. Also included are RAM disk and an ASCII screen dump that is activated by a shifted CONTROL-P keystroke.

The Thought Works Technologies operating system is based on MS-DOS 1.25, and supports all four IBM compatible formats on double-sided drives, but it only supports 40-track drives. Thought Works also sells their Datafile hard disk subsystem in 10, 20 and 40 megabyte versions, and an operating system to support it. It comes with a program called *kCAP* that supports compression and expansion of hard disk files. It will allow a 10 megabyte hard disk to be backed up on floppies in eight minutes. Thought Works also sells a 10 megabyte streaming tape cartridge and drive to back up hard disks. It is available in both internal and external unit configurations. Greywolf also has operating systems to support hard disk drives.

As can be seen from the description above, there are a number of differences in the ways that these operating systems handle different disk formats. There are also significant differences in the ways that they handle disk formatting and copying, and file reading and writing. Some of the systems are faster at some of these tasks than the others, and some of these improvements in speed make a significant difference in some tasks, but a negligible difference in other tasks. Generally, the differences are less noticeable in those applications programs that tend to run slowly, because the overhead associated with these programs washes out the differences in disk handling times.

Also, it is important to realize that the situation with respect to 80-track standard formats is completely different than that with respect to 40-track standards. In the latter case there are four, well accepted standard formats: the IBM PC formats. In the former case there are no accepted standards, and the different

companies have chosen to support different 80-track formats.

In fact, running *CHKDSK* on a disk with an 80-track format created on a different operating system than the one that is currently running can corrupt the directory on the disk. Sometimes it is quite difficult to recover the files on the disk after the directory has been corrupted by *CHKDSK* running on an operating system that did not recognize or properly interpret the disk format.

From the point of view of 550 series users who now have, or are planning to get 80-track drives, it would be better if a small set of formats were to emerge as standards so that all of the companies would have to support them.

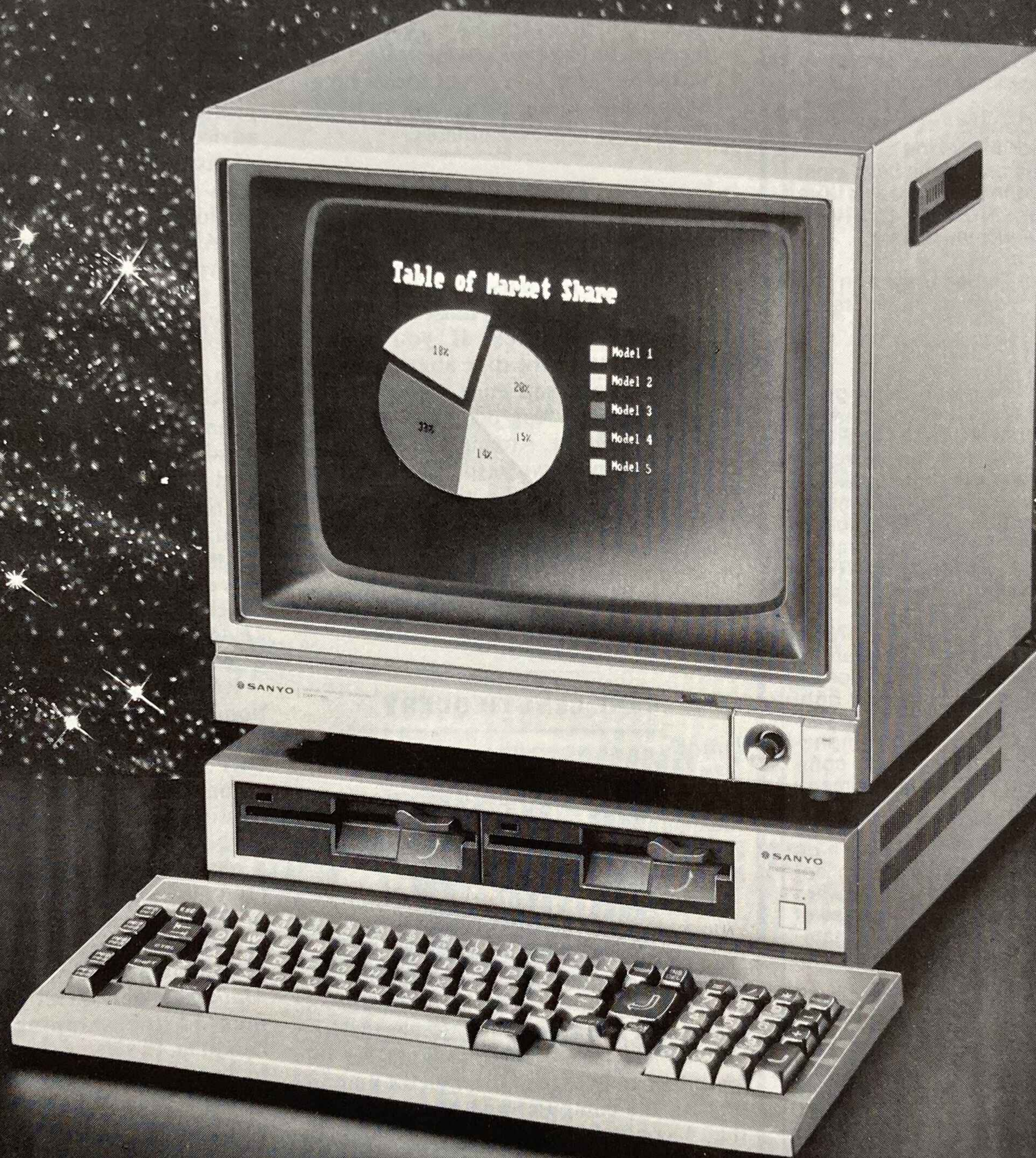
There are also significant differences in the implementation, versatility, power, and operation of the special features that are provided with (or available for) some of the operating systems, and there is also a significant difference in cost and availability.

I wish that I could tell you which operating system was the best in some absolute sense, or which was the best buy, or even which was the best suited for certain applications. But it is difficult to do a fair and comprehensive study of this nature in a period when the products are evolving rapidly. However, I hope that as a result of this article you are better aware of what to look for in an operating system. Maybe future reviews will cover some of these points in detail.

In the area of disk handling, I would suggest reporting: the time to boot, the time to format, and the time to *DISK-COPY* a 360K disk; the time to format and the time to *DISKCOPY* an 800K disk, if supported; whether *DISKCOPY* can be done without formatting when the disk is already in the right format; the time to copy 40 files of 1K each; the time to load and save a 20K file in BASIC, *EasyWriter*, and *WordStar*; the maximum number of files allowed by the 80-track formats, the minimum file sizes allowed by the 80-track formats, and what other operating systems and/or computers support the same 80-track formats, if any.

(Jon Geist, a physicist with the federal government, has more than fifty publications to his credit on optical radiation measurements and detector physics. He is the recipient of an IR-100 Award, the Arthur S. Fleming Award and the Dept. of Commerce Silver Medal.)

NOW. SANYO POWER.



The MBC 550 Series

Monitor Optional

The MBC 550 Series are high performance, MS-DOS, 16 bit personal computers with color graphics and up to 256K RAM expandability. Available with either 160K or 360K drive(s).

All models come with MS-DOS, Basic, WordStar®, CalcStar®, EasyWriter I™. Dual drive models come with additional IUS or MicroPro® bundled software. And, the powerful operating system allows you to run many of the IBM PC business software programs. All for a price that can't be beat.

If your needs are for word processing, accounting, spreadsheets, data base management, advanced integrated programs, or home and educational applications, experience the power of the Sanyo MBC 550 series now.



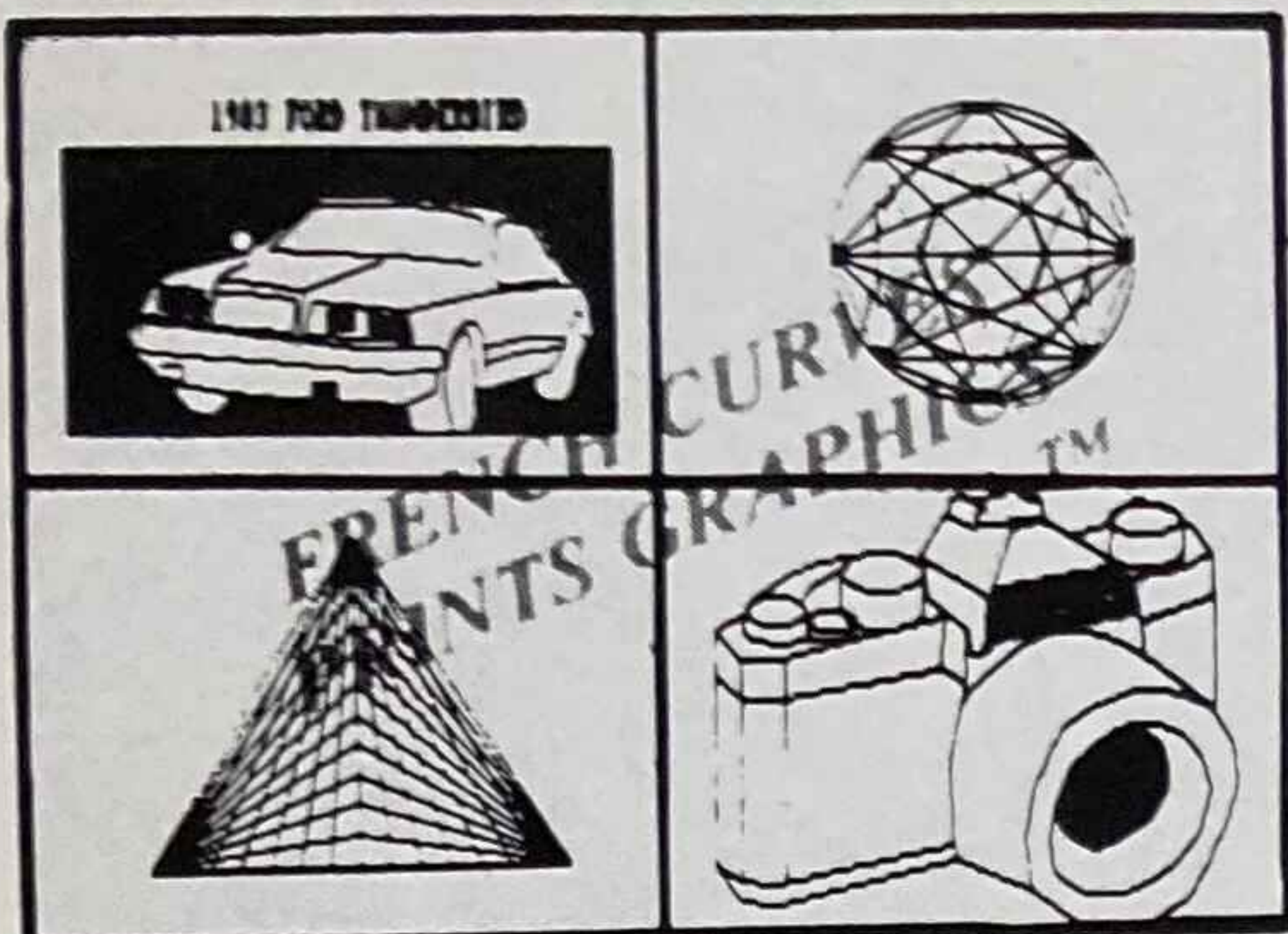
SANYO

COMPUTER DIVISION

SANYO BUSINESS SYSTEMS CORP.

51 Joseph Street, Moonachie, N.J. 07074

YOU'LL FIND OUR NAME EVERYWHERE.



FRENCH CURVES is a slick product! Extremely easy to use ...

Arthur Shebar
National Sales Manager
Sanyo Business Systems

FRENCH CURVES is a versatile program with which even I can produce high quality graphics, charts, blueprints or other graphics as desired.

Bob MacDonald
Soft Sector Magazine

FRENCH CURVES is one of the best, most exciting Sanyo graphics programs I've seen yet. Moreover, **FRENCH CURVES'** screen dump to the printer is tops ...

Bill Lathrop
Computer Trader Magazine

FRENCH CURVES works as advertised!

Richard Goehl
Computer Consultant
Creative Computers

FRENCH CURVES is a graphics program to allow you to draw on the Sanyo. Anything the hand can draw, **FRENCH CURVES** can duplicate and more! You can enlarge or reduce your graphics creations, save or load to disk, combine graphics and dump to most dot matrix printers. Create graphics with **FRENCH CURVES** and incorporate in your own programs. **FRENCH CURVES** comes with a 30 page illustrated users manual.

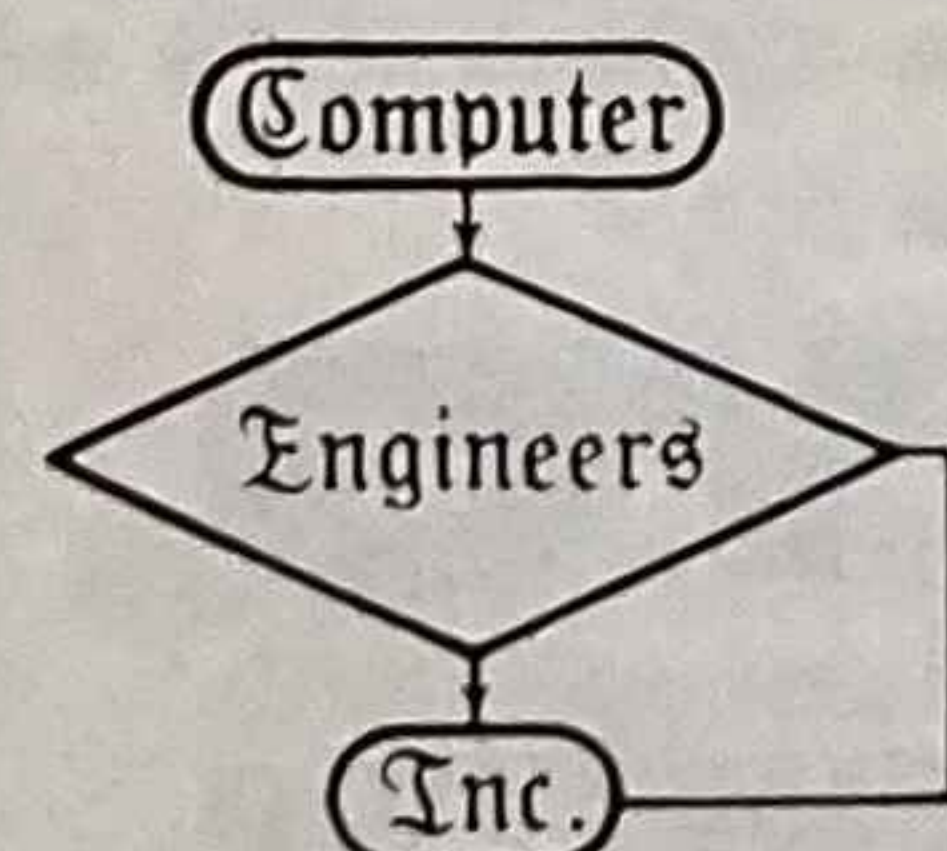
By Yvon Bourque \$75.00
MATMAN™ - Matrix Manager - Setup any of the print features available for your Epson, Panasonic, Gemini or Delta printer right from MSDOS before you enter your programs. Expanded, Compressed, Emphasized, Pica, Elite are just a few of the commands available from **MATMAN**, the menu driven, command file.

Only! \$29.95
CHECK TRACKER™ - The ultimate high speed, machine language, checking account manager which should win an award for its flexibility, data retrieval and ease of data entry/edit. Reconciles bank statement, provides unlimited group codes with multiple retrieval search.

Only! \$39.95
NUMBER FUN™ - Learn ADD / SUB / MUL / DIV the fun way for grades K thru 9. Provides happy face for lower grades with large full screen numbers and selective difficulty levels.

By Yvon Bourque. Only! \$29.95
PROGRAMMERS: Computer Engineers is always looking for Top Quality Sanyo and Generic MSDOS software to publish. For consideration, send copy of program and documentation to Computer Engineers, Inc., Attention: John Shackleton.

★ Dealer Inquiries Invited ★



Computer Engineers

1000 Pike Road
Birmingham, AL 35218

1-800-228-2321

or

(205) 781-0711

Call or Write Today



Continued from Page 6

of MS-DOS). It seems as if the folks who wrote Sanyo BASIC had intended to use **CLOCK** as a device name just like **PRN:** or **CON:**, but never got around to implementing it. Just what it was supposed to be is anyone's guess.

If you want to get sneaky, you can change it to something other than **CLOCK** by using a "zap" program and editing bytes 40H to 47H of relative sector two of **IO.SYS**. You may want to change it to eight spaces or something that would not interfere with BASIC program names. Changing it seems to have no adverse effect on DOS, but keep an eye out for strange happenings and report them to us if the change causes problems.

TYMELY TIP

Editor:

Here is a tip that could save valuable time for those who wish to use CompuServe with their Sanyo 550/555, but must use Tymenet to access the service. If you wish to download data to the disk after signing off of CompuServe, you must do so after the Tymenet prompt "log on" and before you hang up the phone. Attempts to save before leaving CompuServe result in a "file not closed" error. When the phone connection is broken, the keyboard locks up and you must re-boot, thus losing what you have saved in memory.

Edwin P. Marks
Fargo, ND

LINE LENGTH QUERY

Editor:

In doing a label program in BASIC the other day, I wanted to use compressed type. Incidentally, I am using a Sanyo 555 with a ProWriter. I really like its ability and flexibility.

Anyway, I wanted to use the compressed type and had trouble in moving my printing to the right-hand side of the page. I noted that the machine wanted to default to a line return at space 80. I went to *WordStar* and found that it would print 130 characters a line, as advertised, but I couldn't get that feature in BASIC. I read through the manuals of both the computer and printer; nothing that I could find would help. I took the question to my dealer and, though he showed interest and seemed to enjoy scratching his head — no help.

A friend at work does it on his Kaypro with the command **LPRINT LINE WIDTH 255**. I have tried variations of this command with no success.

John Pickrell
Boise, ID

Editor's Note: You missed one variation, John. In Sanyo BASIC, you use the command **WIDTH ###**, where **###** is a number in the range of 30 to 255, to set the printer line length. As you noted, it defaults to 80.

ONE MORE TIME

Editor:

In a recent letters column [October '84], I gave some information which is slightly incorrect, or at least, incomplete. Readers may recall that in the premier issue of **SOFT SECTOR**, I published my *FastLoan* loan amortization program, and many readers wrote to inquire about how to get the results to their printer for an easy and more permanent record.

One of the answers I gave was to edit the program to change some of the **PRINT** statements to **LPRINT**, or to add the **LPRINT** statements corresponding to whatever information they may wish to have printed. This is correct. However, upon the advice of a reader, I mentioned the possibility of easier editing via a word processor rather than working the editor in Sanyo BASIC. To do so requires that the program be saved in ASCII. Now here is where I gave information which needs improvement. I said to load BASIC and then *FastLoan* (still okay) and then to **SAVE FASTLOAN/ASC",A**.

In the first place, I must have had the TRS-80s in mind, for the slash is used for extensions there, but not in MS-DOS, and certainly not on the Sanyo 550/555. You need a period. Secondly, *EasyWriter* does not recognize files with the **.ASC** extension, or if it does, I do not know how to get it to do so. (I do not know whether *WordStar* will do any better or not.) So instead, save the program by this: **SAVE "FASTLOAN.EZF",A** (note the *EasyWriter* extension).

Rather than go through all the aggravation, I would instead suggest getting a screen print utility. I have improved *FastLoan*, not only to correct its failure to print out the amortization table for a possible last fraction of a year (when the period is not a whole number of years), but to make for a nice printout when such a screen print utility is used.

FastLoan comes as one of at least a dozen programs on my company, Recreational Mathematical Software's disk, *Magic Math*, available directly from me for \$24.95 plus \$2 for shipping, processing and handling. In view of the nice reader response to *FastLoan*, I will pay the shipping charge for any reader who mentions **SOFT SECTOR** and requests the free shipping.

Also, as a contributing editor of **SOFT SECTOR**, I will continue to answer pertinent readers' questions, in addition to sending information about *Magic Math*, provided readers enclose a self-addressed, stamped envelope for my reply. (Those 20 cent charges add up when you get 1,000 letters a year from readers of your various columns.) [129 Carol Drive, 18411.]

Michael W. Ecker, Ph.D.
Clarks Summit, PA



Computer Gallery

WE MEET OR BEAT ALL PUBLISHED PRICES ON SANYO MBC-PACKAGES!

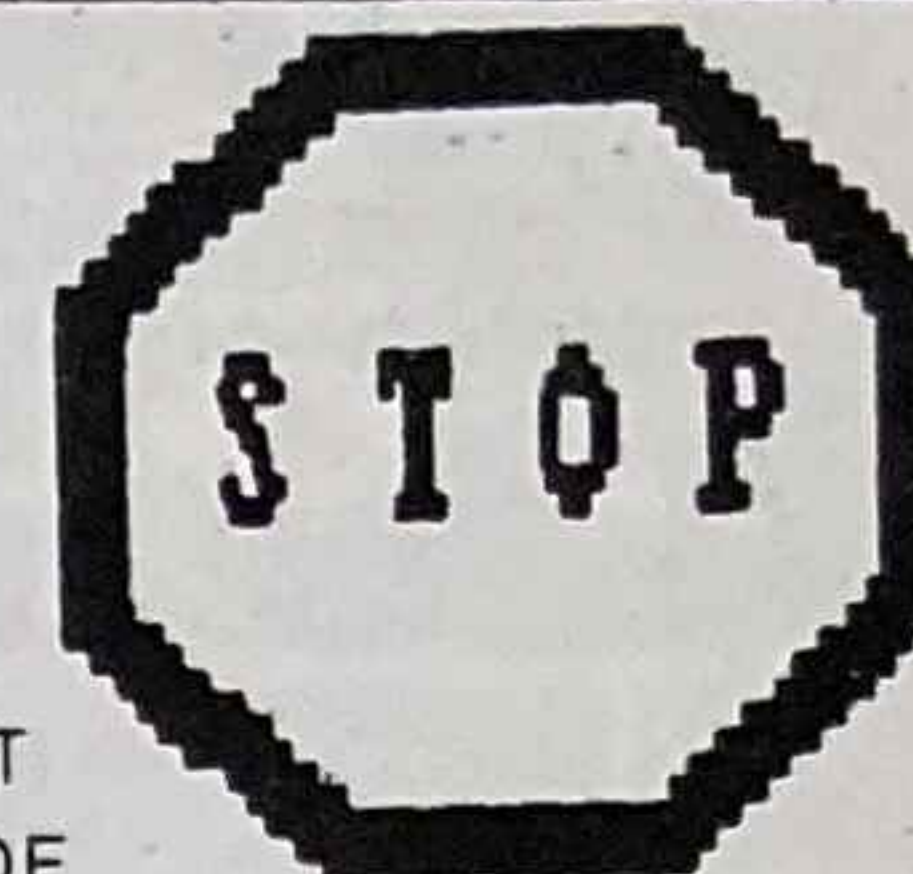
20 Hillwyck Drive • P.O. Box 7420 •

Toledo, Ohio 43615 • (419) 535-7370



ALL HARDWARE SHIPPING
IS CHARGED AT ACTUAL COST.

YOUR CHOICE WITH EITHER PACKAGE
PANASONIC DOT MATRIX GRAPHICS PRINTER
OR
LQ-2 12cps LETTER QUALITY PRINTER



WE HAVE
THE LARGEST
SELECTION OF
HARDWARE & SOFTWARE
FOR THE SANYO PC- CALL
OR WRITE FOR CATALOG!

SANYO MBC-550-2

CRT-30 Monitor as shown in photo.
Not a CHEAP substitute.
SOFTWARE FREE
WORDSTAR — CALCSTAR
EASYWRITER — SANYO BASIC
MS-DOS 2.11

\$1095⁰⁰

ADD \$1595.00 FOR 10MEG HARD DRIVE
ADD \$350.00 FOR NEC 1216 RGB MONITOR

SANYO MBC-555-2

CRT-30 Monitor as shown in photo.
FREE SOFTWARE in package #1
PLUS MORE!
SPELLSTAR — MAILMERGE
INFOSTAR — DATASTAR
REPORTSTAR

\$1445⁰⁰

QUBIE 300/1200 SMARTMODEM \$329.00
WORKS JUST LIKE HAYES 1200 MODEM
LOOKS JUST LIKE HAYES 1200 MODEM
DOES NOT COST LIKE HAYES 1200

PRINTER SPECIAL

PANASONIC KXP-1090
IBM & EPSON COMPATABLE
GRAPHICS AND CODES
FRICTION AND TRACKER FEED
CORRESPONDENCE MODE

ONLY \$235.00
CALL FOR OTHER PRINTER
PRICES

HARDWARE SPECIALS

TEAC-55B	\$169.00
360K DISK DRIVE	
2 TEAC-55B	376.00
with DS-DOS PLUS 360-400K	
SANYO RS-232-PORT	79.00
128K RAM KIT	95.00
150ns PRIME CHIPS	
8087 MATH CHIP	165.00
USE WITH TURBO PASCAL	

SOFTWARE

WE STOCK ALL
MICHTRON
AND OTHER SOFTWARE FOR
THE SANYO AND IBM
ALL SOFTWARE IS A MINIMUM

10% OFF

FREE SHIPPING ON SOFTWARE

TURBO
PASCAL
\$44.95

TURBO
WITH 8087
SUPPORT
\$81.95

WITH 8087
CHIP
\$239.00

M A S T E R G R A P H

WITH WINDOWS!

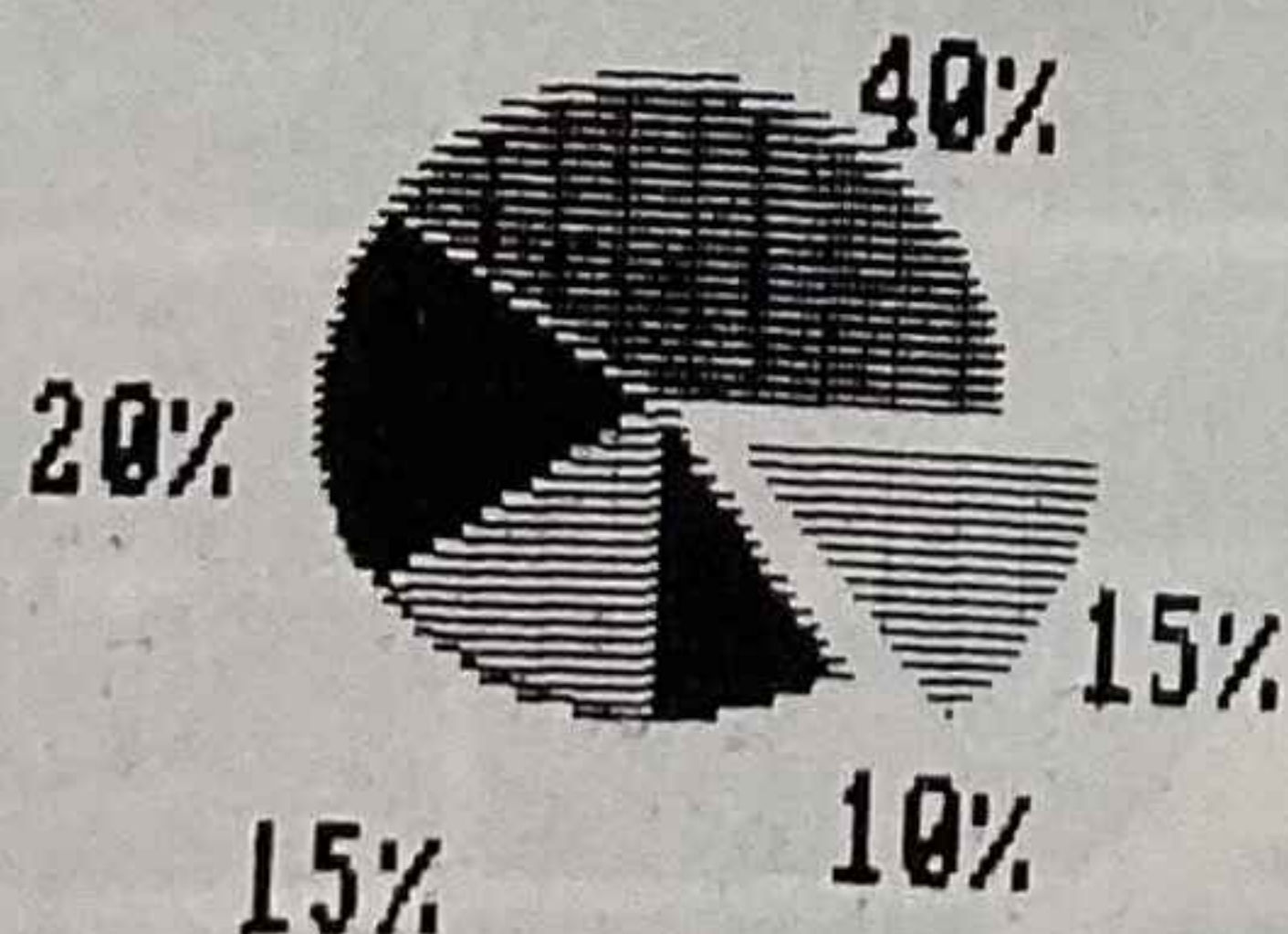
ULTRA FAST WINDOWS MAKE IT EASY
AND FAST TO USE.

FULL SCREEN EDITOR MAKES DATA
ENTRY FASTER THAN A SPREADSHEET.

LOADS IN DATA FROM SPREADSHEETS
LIKE CALCSTAR!!!!

BUILT-IN SCREEN DUMP PRODUCES
SHADES OF B & W OR COLOR!

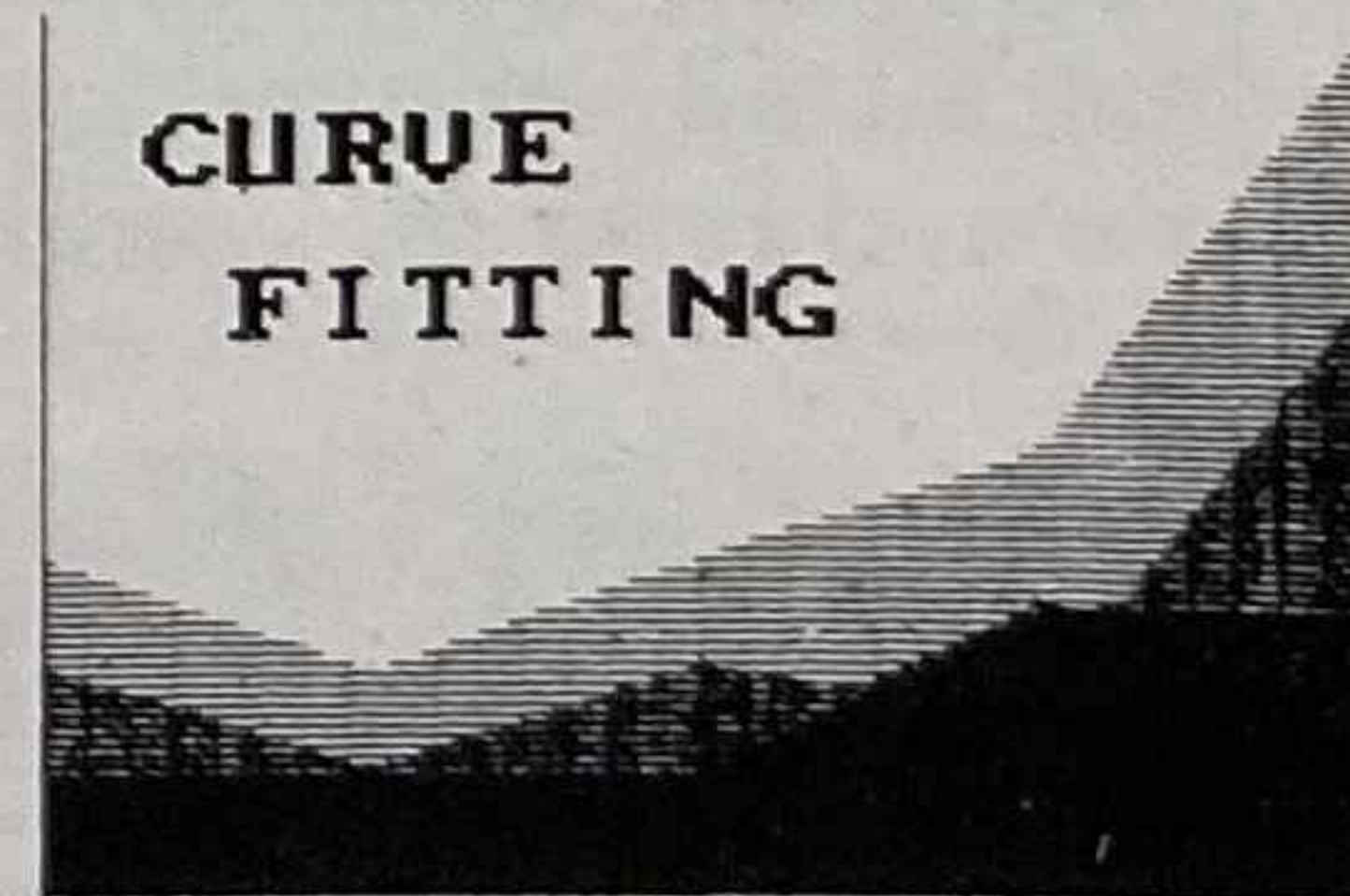
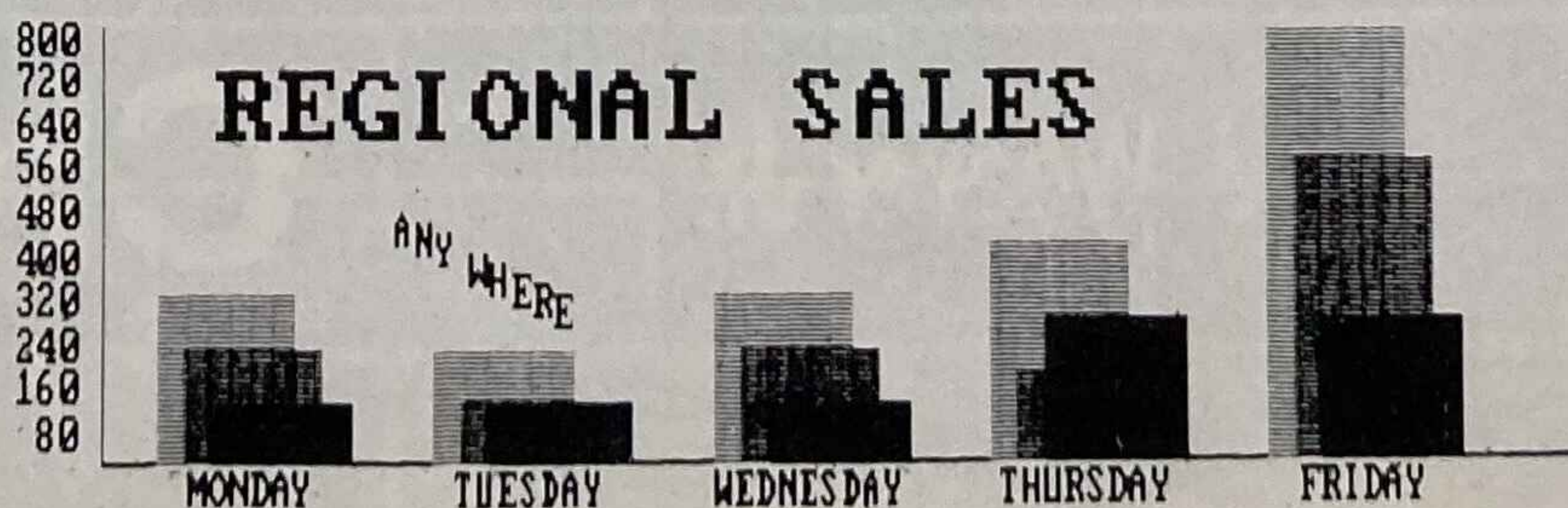
LOADS & SAVES SCREENS TO DISK FOR
INTERFACING WITH PICASSO AND
FREEZE FRAME.



MAKES BAR, 3-D, LINE, AREA, PIE,
EXPLODED PIE, MULTIPLE PIE, AND
TEXT ONLY GRAPHS.

TEXT MAY BE ENTERED ANYWHERE ON
THE GRAPH IN ANY SIZE AND COLOR

MAKES PRESENTATION, BUSINESS,
AND STATISTICAL GRAPHS EASILY!!



SUPPORTED PRINTERS

IBM AND EPSON COMPATIBLES
PROWRITER 8510A, 8510BPI
NEC-8023
GEMINI 10, GEMINI 15X
QUADJET COLOR INKJET
CANNON COLOR INKJET
MANNSMANN TALLY MT180
AND SPIRIT 80
MASTER GRAPH 3

ONLY

256K **\$89⁹⁵**

ALSO AVAILABLE
FROM YOUR DEALER

Trapped between the clock and a hard place, you're caught up in . . .

Run'Round is a one-player game of skill and strategy. Pitted against the clock and five computer-controlled opponents, you try to force them to crash into the walls or each other to score. *Run'Round* also includes a short machine language routine that you can use in your own BASIC programs to generate all kinds of sound effects with the Sanyo's built-in speaker. The program requires no joysticks or hardware add-ons and runs in 128K of memory.

Type in the program from Listing 1. The program's routines and the variable assignments are summarized below. Be especially careful with the data statements in Lines 250 (the sound routine itself) and 260 (the directional strategy data for moving the computer's men). After *SAVEing* the program to disk, type *RUN* to start.

After the screen is set up, you can press any key to start the game. The computer's five men (green, light blue, red, purple, and yellow) are placed randomly around the board, and you (white) start in the center. For monochrome displays, with the video switches set to "on-off-off-off," your man will be the brightest one on the screen.

Use the arrow keys on the numeric keypad to change your direction (be sure the NUM LOCK toggle is off). Running into the dark blue border, another man's trail, or your own trail will kill you and reset the computer's men.

You score points for each computer-controlled player that crashes before you do — 10 points for the first crash of each wave, 20 points for the second, and so on. Eliminating all five opponents in one wave also subtracts 20 units from your time, the white line across the bottom of the screen. When this line reaches the right side of the screen, the game is over and the high score is updated and displayed. Press any key to start another game. Also, pressing ESC at any time will toggle the sound on or off, as shown by the musical note in the upper right-hand corner of the screen.

To use the sound routine from *Run'Round* in your own BASIC programs, you will need the *CLEAR* statement from Line 20, the first part of Line 50 (from the start through *PL=&H11D*), and the data statement in Line 250. To send a tone, use the command *CALL &H100,P,D*, where *P* is the pitch of the note (1 - 32767, 1 = highest), and *D* is the duration (1 - 32767, 1 = shortest). Both values must be previously defined integer variables: immediate values, such as *CALL &H100,100,10*, will not work. To disable the sound, use *POKE PL,0*, and use *POKE PL,8* to re-enable it. You can easily generate individual tones of any pitch and duration, or use a *FOR/NEXT* loop similar to the ones in Lines 190 and 210 for a "sweep" effect. Experiment with the values to get the sounds you need. I'd be interested in any unique effects you come up with.

Program Routines

10-30	title, copyright notice
40	set up arrays and variable types, reset random
50	read sound routine and arrays, initialize strings
60	print screen border, initial titles
70, 80	wait for keypress to start game
90	initialize game
100	get keyboard input, set direction
110	check for player hit, move player
120	check computer hit, get random direction
130	move computer man, make noise
140	set time, check for end of game, check for high score
150	set high score string, restart game
160, 170	start computer men at random locations
180	add score for computer man hit
190	erase hit man, check for end-of-wave bonus
200	clear screen, continue game
210	erase computer man
220	erase player
230	clear screen, reset hit pointers

The

Run'Round

By J. Weaver Jr.

Challenge

240 print score
 250 DATA for sound routine
 260 DATA for random direction
 routine
 270 DATA for move routines

Variable Assignments

Arrays:

BX X positions for computer men
 BY Y positions for computer men
 DO random direction orders
 L length of trails
 OU out of wave flags
 P position of trails for computer
 men
 P6 position of trail for player
 X X directions
 Y Y directions

Variables:

A, B, I general use
 CO color code (0-5)
 D sound duration (other tones)
 DUR sound duration (man tones)
 F sound pitch (0-32767)
 HI high score (0-?)
 IE trail erase string
 IH trail print string
 IK "press any key" print string
 IN musical note character
 IP man print string
 IR record print string
 L length of trail (1-?)
 M man number (1-6)
 ML computer men left (0-5)
 PL sound toggle POKE location
 (&H11D)
 SC score (0-?)
 T time (0-640)
 V player direction (1-4)
 X player X position (3-77)
 XN new X position (1-79)
 Y player Y position (2-23)
 YN new Y position (1-24)
 Z ASCII value of INKEY\$
 (0-255)

THE SOUND ROUTINE TECHNIQUE

The sound routine used in *Run'Round* is an example of "single-bit" sound, or one popular method of generating tones and complex noises on computers without true "sound" channels. By rapidly toggling a control bit connected to an amplifier and speaker, square waves are generated, and the tone of the sound can be varied by changing the delay between the toggle, thus varying the frequency of the square wave.

Explaining how single-bit sound works on the 550/555 requires delving a bit into the hardware of the machine. As you may have been able to figure out from the "Technical Reference" section of the *Sanyo Operator's Guide*, the 550 series keyboard is actually a separate serial device which accepts keystrokes and then relays them sequentially to the DOS at 1200 Baud. The actual link between the keyboard and the rest of the computer is the 8251A Programmable Communication Interface chip, the exact same chip used on the Sanyo's RS-232 board.

Since the 8251A USART (Universal Synchronous/Asynchronous Receiver/Transmitter) is bi-directional, and since only the "receive" portion of the chip was being used and the 550/555 needed some type of sound generation capabilities, the transmit data line (TxD, Pin 19) was tied (through an amplifying transistor) to the built-in speaker. Therefore, the sound you hear when the Sanyo "beeps" is actually the sound of a byte of data being "transmitted" through the

speaker, complete with start bit, parity bit and stop bit. While a certain amount of variety is possible by changing the actual data byte sent, the presence of the control bits interferes with the square wave generation, resulting in poor quality and limited variety. A second method involves changing the pitch by resetting the Baud rate of the USART; however, range is still limited, and whenever the Baud rate does not equal 1200, all keyboard input is lost!

The final solution lay in the manipulation of the "break" signal generated by the 8251A. Unlike the BREAK key, which sends a single character, the "break" signal grabs the output line and holds it low until the break mode is released. Since the TxD output is normally high, the "break" mode gives us a method of generating clean square waves for the built-in speaker.

Listing 1 is the source code for the assembly language routine embedded in *Run'Round*. The frequency value and duration of the note desired are passed to the routine on the stack with the CALL command from BASIC and retrieved by the code at label START. The code at label PLAY sends the control byte to the USART to toggle the break mode, and then performs two interlocking delays for the frequency and duration of the note. When the note is completed, the code at label EXIT returns the break mode to its original state and exits the routine. The RETF8 instruction clears the variables passed from the stack before returning to BASIC.

Sanyo 550 Owners: Receive a diskette with latest updates of Sanyo:

1. User groups
2. Software for Sanyo
3. Hardware for Sanyo
4. Bulletin boards
5. List of Sanyo magazine articles
6. Exchange of nifty programs (supplies via public domain).

Send \$6.00 to Diversified Computers, P.O. Box 1083, Springfield, TN 37172-1083. Phone: 615-552-0940 or 615-384-1172.

"BASF diskettes \$18.00 delivered"

LOWEST PRICED! DISKETTES BOX OF 10

	SS/DD	DS/DD	DS/QD
NASHUA	\$13.75	\$18.75	\$29.75
MEMOREX	18.95	22.95	31.95
MAXELL	18.95	24.95	37.95
DYSAN	20.75	27.95	42.95

ADD \$2.00 SHIPPING AND HANDLING MC and VISA ACCEPTED
 WRITE TO DOWNEAST DISKETTES, P.O. BOX 59, YARMOUTH, ME 04096
 OR CALL: 207-865-9588

Announcing PRODESIGN

The Professional Graphics Design System!

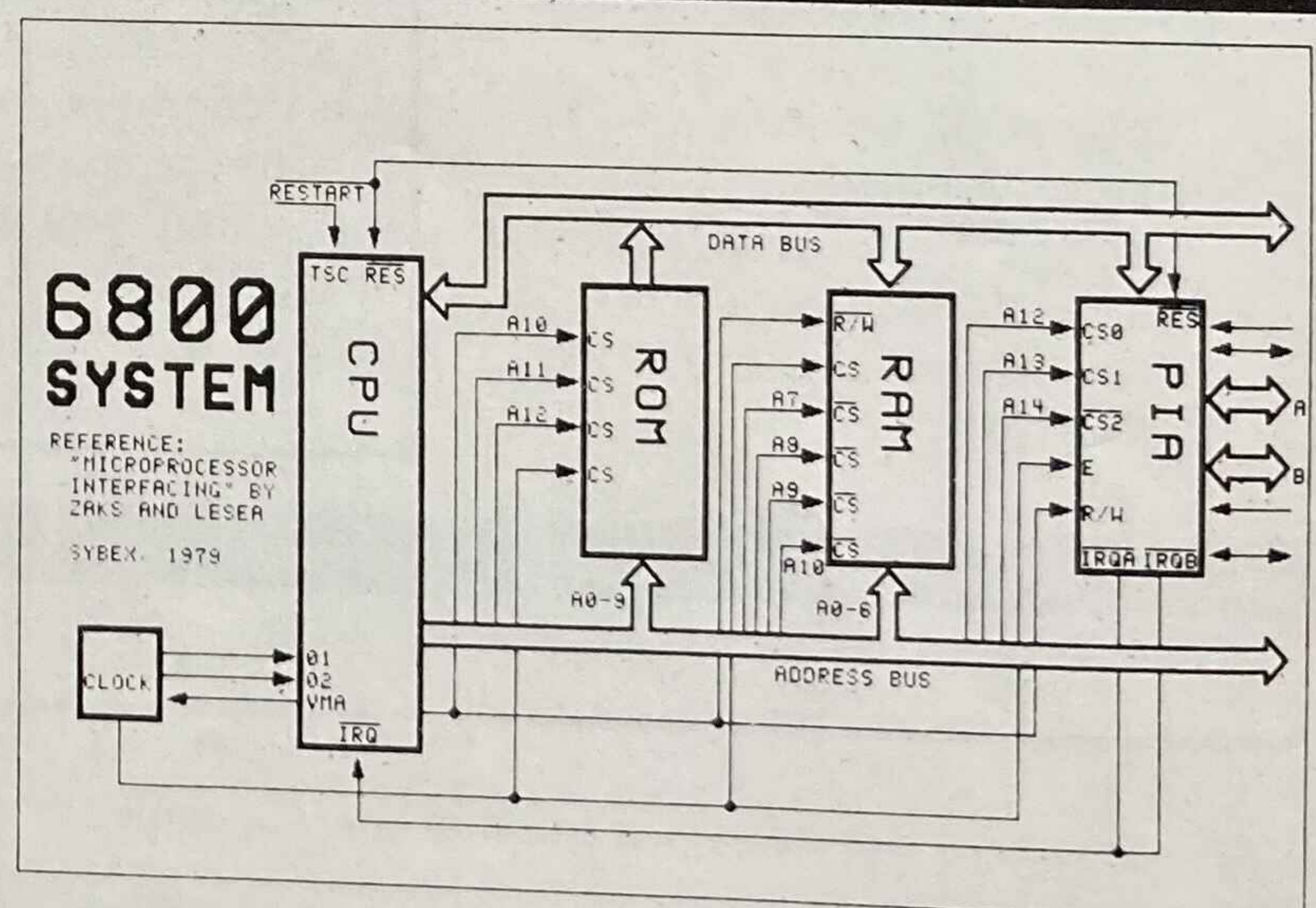
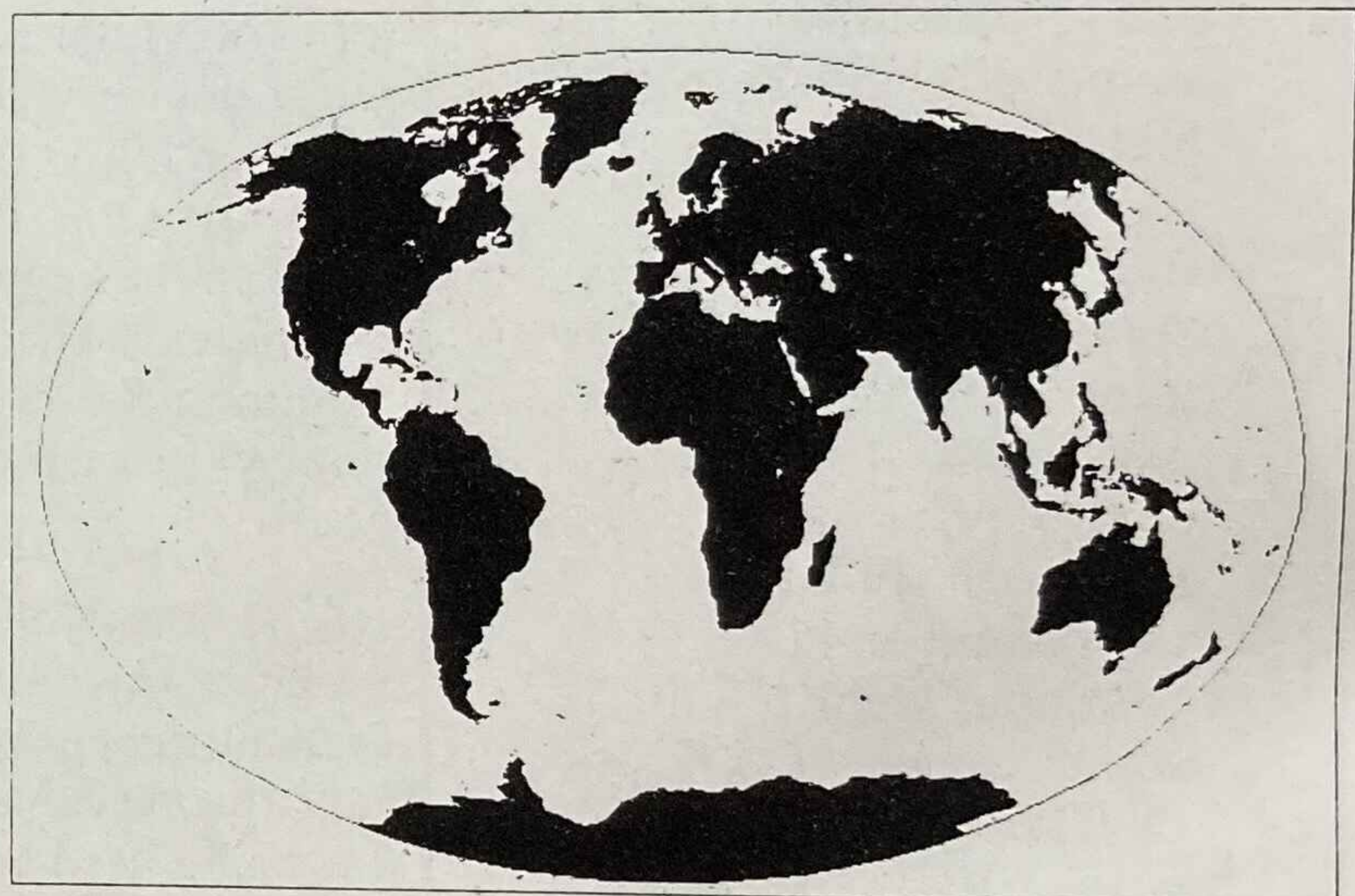
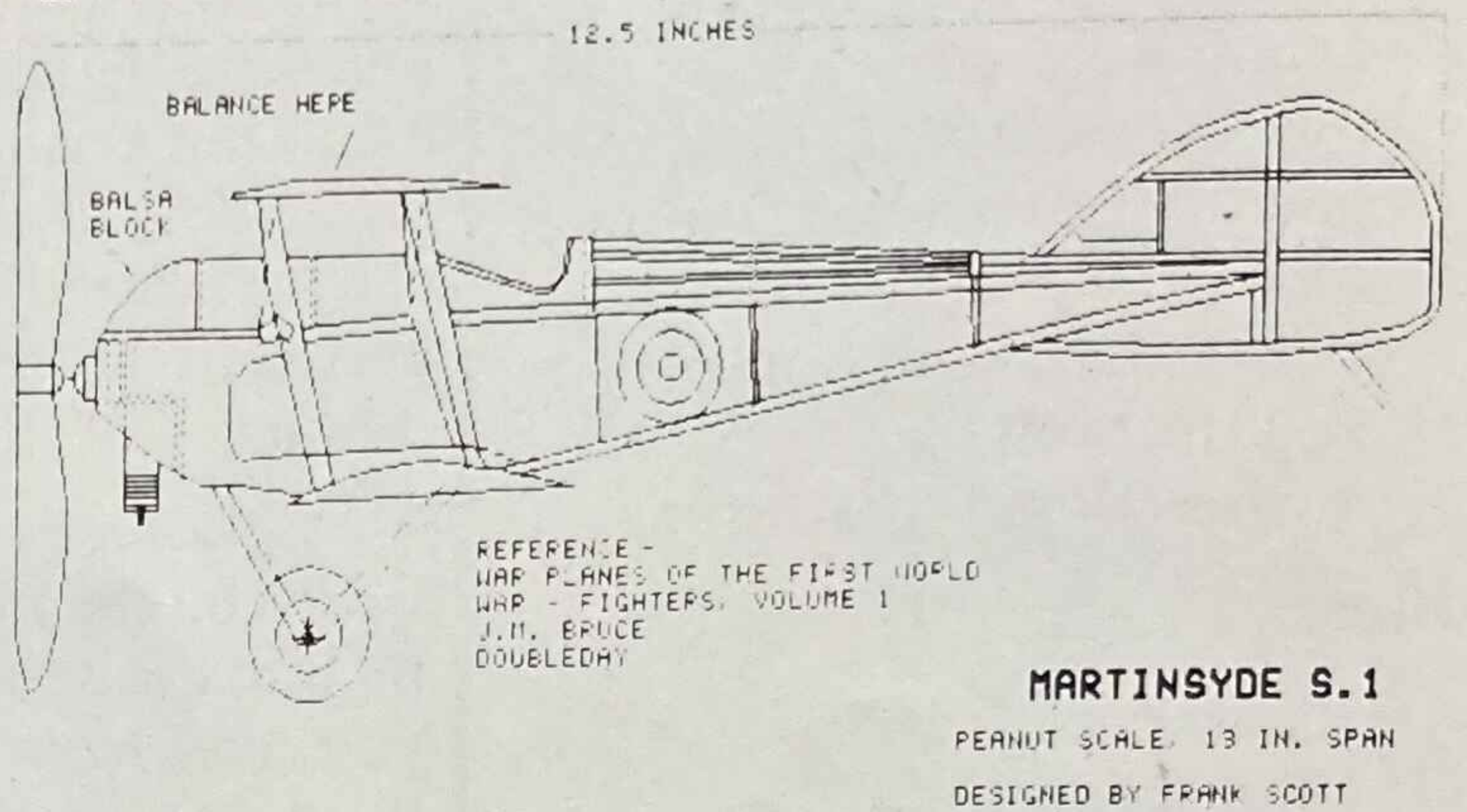
WHAT IS PRODESIGN?

PRODESIGN is a powerful graphics design tool that takes advantage of the superior graphics capabilities of modern personal computers. It allows someone unfamiliar with computers to design and draw figures, charts, schematics, or blueprints in no time. PRODESIGN has the capability to store, retrieve, and print figures drawn on the screen. In addition, it can manipulate figures and text by altering the size, angles, and even dimensions!

PRODESIGN —

- * Provides an easy-to-use cursor that can be moved about the screen.
- * Utilizes a "virtual screen" 4 times the actual size of the monitor display.
- * Draws straight lines or curves between points on the screen.
- * Draws circles and oval easily.
- * Allows lines of varying thickness to be used.
- * Provides "area fill" capability.
- * Allows text to be displayed at any location, size, or angle.
- * Stores and retrieves drawings on disk.
- * Outputs drawings to dot matrix printers.
- * Allows figures and symbols to be created, stored, and retrieved at any location, size, or angle.
- * Allows text and figures to be slanted in any direction, giving modern or three-dimensional effect.
- * Provides for user-created files to be input and displayed on the screen. This allows data from other programs to be used.

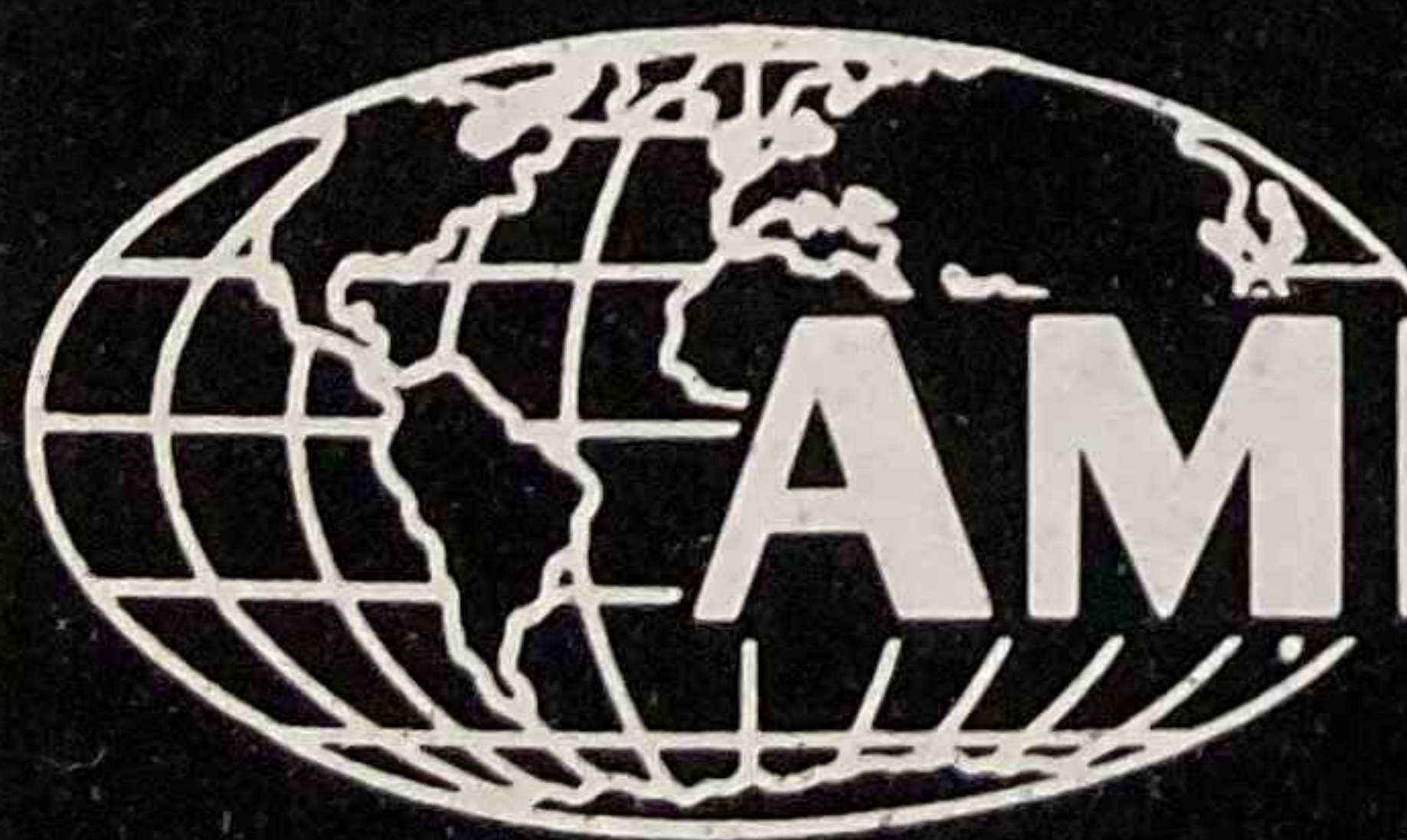
SAMPLE MODEL AEROPLANE



ONLY

\$199.95

DEMO DISK IS
AVAILABLE FOR
\$10



918/825-4844

AMERICAN

118 SO. MILL ST
PRYOR, OK 74361

**Small
Business
COMPUTERS**

See Your Local
Dealer or Order Direct:
(918) 825-4844

Source code for *Run'Round* sound routine.

```

name SOUND

PROGRAM group CODE
assume CS:PROGRAM

CODE segment public
org 100h

PENTRY:
    JMP short START

NOTE dw 0 ;NOTE DELAY

START:
    CLI ;DISABLE INTERRUPTS
    MOV BP,SP ;BP => STACK
    PUSH DS ;SAVE SEGMENT REGISTER.
    LDS BX,dword ptr 8[BP] ;GET NOTE ADDRESS
    MOV CX,[BX] ;GET NOTE
    LDS BX,dword ptr 4[BP] ;GET DURATION ADDRESS
    MOV DX,[BX] ;GET DURATION
    PUSH CS
    POP DS ;SET DATA SEGMENT
    MOV NOTE,CX ;SAVE NOTE
    MOV AX,35h ;SET OUTPUT BYTE

PLAY:
    XOR AL,8 ;TOGGLE "BREAK" BIT
    OUT 3Ah,AL ;TELL USART ABOUT IT PLAY1:
    DEC AH ;DECREMENT COUNT
    JNZ short PLAY2 ;LOOP FOR DELAY
    DEC DX ;DECREMENT DURATION
    JZ short EXIT ;JP IF DONE PLAY2:
    LOOP PLAY1 ;CONTINUE DELAY
    MOV CX,NOTE ;RESET DELAY
    JMP short PLAY ;CONTINUE FOR DURATION

EXIT:
    XOR AL,8 ;TOGGLE CONTROL BIT
    CMP AL,35h ;"BREAK" NOW ON?
    JNZ short EXIT1 ;JP IF NOT
    OUT 3Ah,AL ;RESET USART EXIT1:
    POP DS ;RESTORE SEGMENT
    db 0CAh,8,0 ;RETF 8

CODE ends
end PENTRY

```

WOLFSANGEL ENTERPRISES

proudly presents:

GAME SOFTWARE FOR THE SANYO MBC-5501

KNOBELSPIEL GENERAHL!

IT'S A MAN'S GAME - Knobelspiel originated as a tavern game designed for the sole purpose of determining which fellow would buy the next round. Fancy yourself a gamesman? Then add this one to your repertoire!

IT'S A WOMAN'S GAME - Knobelspiel requires mind rather than muscle or reflex. It combines elements of luck with a strategy that becomes intuitive as experience grows, thereby providing ample opportunity for the fairer sex to administer a sound drubbing to male opponents!

IT'S A CHILDREN'S GAME - Knobelspiel's wry and amusing graphics will delight youngsters from 8 to 80. Unlike the violent arcade-style games, it also provides an educational exercise in arithmetic and allows your child to practice subtraction, addition, and multiplication. Respect for computers is also encouraged by our easy input commands and a playing structure which requires thought before response, that is, no "banging away" on the keyboard or pulling of joystick cords.

Knobelspiel has been a mainstay in Europe for well over a century, proving itself in the test of time as a game that is both easy to learn, yet sufficiently complex to ensure interest- holding "staying power."

In short, KNOBELSPIEL GENERAHL! is one of those rare offerings of software that is indeed FOR THE ENTIRE FAMILY!

And, in this introductory stage of our development, AT A FAMILY PRICE! Just \$19.95 + free shipping on pre-paid orders!

Special features:

1. Price - we devote our full resources to software and documentation, not fancy protection schemes or hyped-up packaging. Our software gives you the most for your dollar in entertainment, usefulness, and (hopefully) enlightenment.

2. Options: play against the computer, the mighty SAM-550, a cheeky fellow, semi-gracious in defeat and positively arrogant in victory. Or play the two- to four-player version while the staid and unobtrusive, yet omniscient SPECS (Selectively Programmed Eye-Counting System) does the refereeing. Nobody need be left out! Although we here at Wolfsangel prefer to play on amber monochrome, there is also the option of using a color monitor.

WOLFSANGEL ENTERPRISES - dedicated to bringing the same value to software that SANYO has brought to hardware. Order from:

WOLFSANGEL ENTERPRISES
ATTN: R. Kvinnesland
Maple Ave., Bldg. Y3-3
Hatfield, PA 19440

Remit check or M.O. for
\$19.95
Call (215) 362-8875 11pm-3pm EST
DEALER INQUIRIES WELCOME

ATTENTION SANYO MBC-550 & 555 USERS

Sure, you bought a great computer at a super price. It's IBM-MS-DOS compatible and readily expandable. BUT, what software is truly compatible, what hardware, which cables, and how about modems and telecommunication software? If you own a Sanyo, you need our help! We can provide answers to your questions AND quality products at great prices. Call or write for more information and check out these items.

(PLEASE SPECIFY WHICH MODEL YOU OWN)

RS-232 SERIAL BOARD \$ 99.95
This product is 100% compatible and includes RF shielding for superior reliability and immunity to noise, and is unconditionally guaranteed for 90 days after purchase.

COPYLINK by U.S. Digital \$99.95 single; \$129.95 dual (for file transfers)
CopyLink is an extremely flexible communications package that includes thorough documentation to allow easy access to any information service. This product is available for the Sanyo MBC-1000, 1100, 1200 and 550 Series computers, as well as other MS-DOS and CP/M computers. (includes free Dow Jones sub. value \$125)

COMPLETE COMMUNICATIONS PACKAGE \$399.95
This will include an RS-232 board, 1200/300 baud modem, and CopyLink.

CPeMULATOR by U.S. Digital \$ 99.95
This program will allow the Sanyo 550 Series computer to run the huge number of programs written for the CP/M computer market.

RAMDISK by American Digital \$ 34.95
This is a very easy-to-operate program that will transform your computer memory into an electronic disk.

TERMINAL COMMUNICATIONS PROGRAM \$ 39.95
A useful program that will allow you to use the RS-232 port to communicate with other computers or information services.

2ND DISK DRIVE UPGRADE

SINGLE-SIDED, DOUBLE-DENSITY DRIVE your choice of EasyPac* or StarPac* \$319.00

DUAL-SIDED, DUAL-DENSITY — complete with New 2.11 DOS \$399.00

*NOTE: EasyPac from IUS contains Easywriter II; Easywriter II; Easy Planner; Easy Filer.

StarPac from Micropro contains Infostar; Mailmerge; Spellstar.

TEAC DUAL-SIDED, DUAL-DENSITY DRIVES no software \$199.50

SOFTWARE

TURBO PASCAL \$44.95

DATABASE MANAGER \$49.95

KNOBELSPIEL GENERAHL \$ 19.95

1, 2 or more player game for the entire family that requires your mind, rather than muscle or reflex, ages 8-80.

INFOCOM — NOW IN STOCK FOR SANYO (2.1 DOS)

INFIDEL	\$39.95	ZORK I	\$34.95
DEADLINE	\$39.95	ZORK II	\$34.95
WITNESS	\$39.95	ZORK III	\$34.95
STARCROSS	\$34.95	ENCHANTER	\$39.95
SUSPENDED	\$39.95	SORCERER	\$39.95
PLANET FALL	\$39.95	SEA STALKER	\$39.95

PLUS — EDUCATIONAL & BUSINESS SOFTWARE AVAILABLE

PARALLEL PRINTER CABLES for Sanyo \$ 29.95

ORDER ONLY — CALL TOLL FREE — 1-800-233-3266

VISA, MASTERCARD, or C.O.D.

Shipping & Handling 3% - \$3.00 Minimum

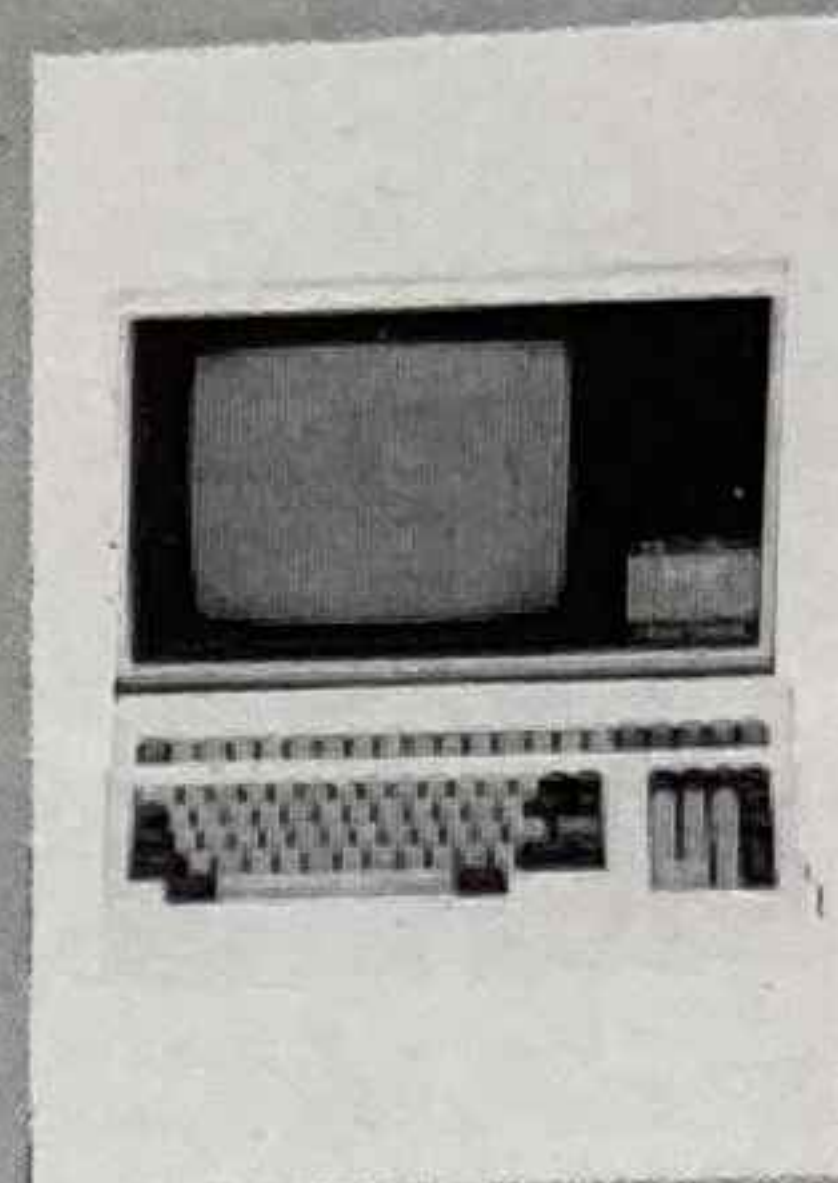
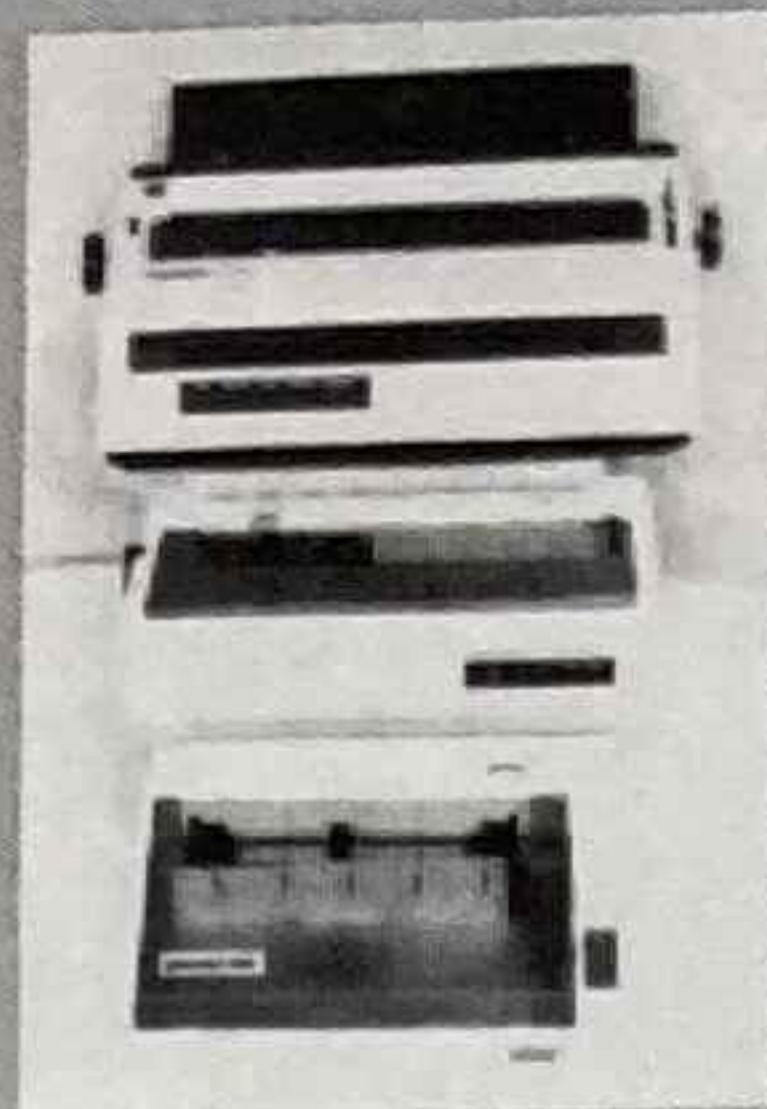


For information, technical service, catalog requests and in PA call Mon.-Sat. **1-717-836-4522** or write:

M.W.S. COMPUTERS

22 EAST TIOGA ST., TUNKHANNOCK, PA 18657

LET THE SOURCE BE WITH YOU



DISPLAYED VIDEO PRESENTS THE AFFORDABLE SANYO

MBC550/With FREE Printer.....	\$949.00
MBC555/With FREE Printer.....	\$1249.00
MBC550-2/With FREE Printer.....	\$989.00
MBC555-2/With FREE Printer	\$1489.00

*ALL 550 SERIES COMPUTERS ABOVE INCLUDE ONE **FREE** GEMINI 10X PRINTER.

GEMINI 15X PRINTER ONLY \$100 ADDITIONAL.

RS232 for 550 Series with **FREE** Terminal

Software..... **\$97.00!!**

64K Memory Upgrade..... **\$54.00**

MBC555 & 555-2 include Wordstar, Calcstar, MSDOS, Spellmaster, Mailmerge & Infostar. MBC550 & 550-2 include Wordstar, Calcstar & MSDOS.

MBC1100/With FREE Printer.....	\$1289.00
MBC1200/With FREE Printer.....	\$1479.00
MBC4000 /With FREE Printer	\$1599.00
MBC1150/With FREE Printer.....	\$1499.00
MBC1250/With FREE Printer.....	\$1699.00
MBC4050/With FREE Printer.....	\$1799.00

*ALL 1100, 1150, 1200, 1250, 4000, 4050 COMPUTERS INCLUDE ONE **FREE** PR5000 LETTER QUALITY PRINTER. PR5500 ONLY \$100 ADDITIONAL.

MBC1100, 1200 & 4000 Series Computer: Include Wordstar, Calcstar, CPM 2.2, Datastar, Reportstar & Mailmerge.

DRIVES

***GOOD NEWS** * SANYO 550 & 555 owners, increase your storage capacity! Upgrade your Sanyo to Double Sided drives.

The upgrade includes two TEAC FD55B drives and a double sided software modification for only..... **\$365.00!!!**

Double sided software modification..... **\$39.95**

TEAC add-on 160K external drive with case & power supply **\$195.00** |

TEAC add-on 360K external drive with case & power supply..... **\$240.00**

MODEMS

Hayes 300 Baud Modem.....	\$215.00
Hayes 1200/300 Baud.....	\$480.00
Anchor 300 Baud Volksmodem.....	\$65.00
Anchor 1200/300 Mark XII-(Hayes Compatible)....	\$259.00

MONITORS

Comrex Amber 12".....	\$125.00
Comrex Green 12".....	\$115.00
BMC Amber 12".....	\$105.00
Sanyo CRT36.....	\$170.00
Sanyo CRT70.....	\$579.00
Amdek Color III +	\$385.00

PRINTERS

Epson RX80.....	\$295.00	Epson LQ1500.....	\$1195.00
Epson RX80 FT.....	\$349.00	Sanyo PR5000 Letter Quality.....	\$479.00
Epson RX100.....	\$549.00	Sanyo PR5500 Letter Quality.....	\$695.00
Epson FX80.....	\$559.00	Gemini 10X.....	\$315.00
Epson FX100.....	\$729.00	Gemini 15X.....	\$479.00
Sanyo Printer Cable.....		\$21.95	

Visit our two
retail locations at:

886 Ecorse Road

Ypsilanti, MI 48197

(313) 426-5086/(313) 482-4424

or

111 Marshall Street

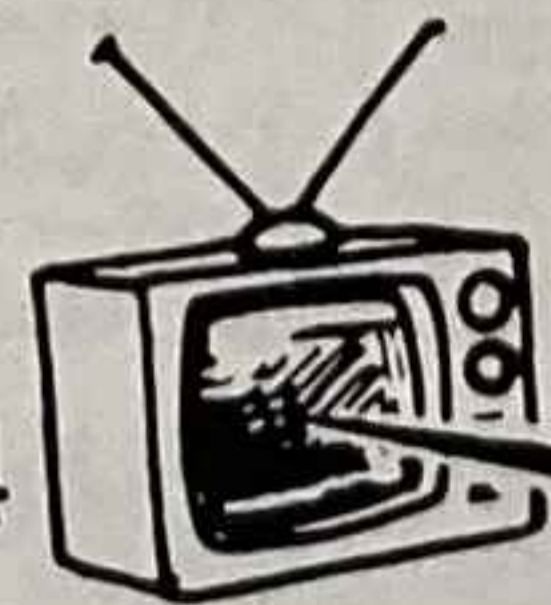
Litchfield, MI 49252

(517) 542-3280

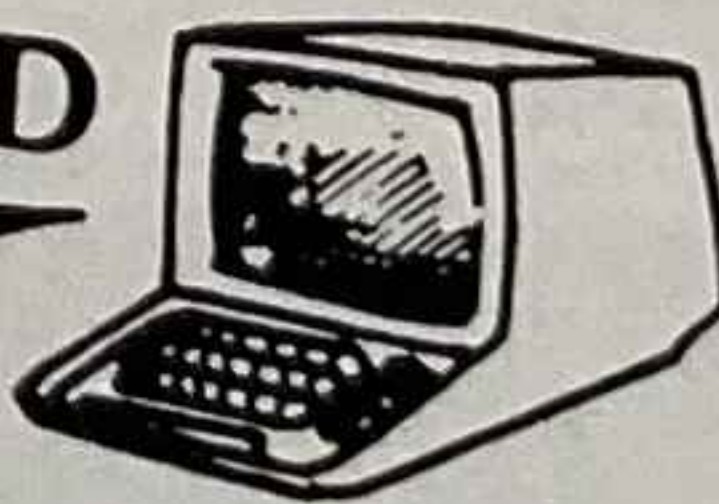
(517) 542-3939

(517) 542-3947 Authorized Sanyo Distributor/Repair Center

WE CARRY TRS80 & SANYO COMPUTERS



**DISPLAYED
VIDEO**



IMMEDIATE DELIVERY

180 Days Parts and Labor Warranty



SANYO

TO ORDER: Call (313) 426-5086; (313) 482-4424; (517) 542-3280
(517) 542-3939 (517) 542-3947

DEALERS BUY DIRECT FROM THE SOURCE!

Prices & Specifications subject to change without notice

The listing:

```

10 ' RUNROUND.BAS - written by J. Weaver Jr.
20 ' Copyright (c) 1984 by Factory Programming
30 ' Permission granted for personal use only
40 COLOR 3,0:CLS:CLEAR 20:DEFINT A-Z:DEFSTR I:OPTION BASE 1:DIM DO(24,4),BX(5),B
Y(5),OU(6),X(4),Y(4),L(6),P(5,125,2),P6(250,2):RANDOMIZE RND(0)*10000+VAL(RIGHT$(
TIME$,2)):LOCATE 1,1,0
50 DEF SEG=SEG(4):FOR A=&H100 TO &H13B:READ I:POKE A,VAL("&H"+I):NEXT:PL=&H11D:F
OR A=1 TO 24:FOR B=1 TO 4:READ DO(A,B):NEXT B,A:FOR A=1 TO 4:READ X(A),Y(A):NEXT
:IP=STRING$(2,219):IH=STRING$(2,177):IE="  ":IR="Run'Round  ":IK="press any k
ey":IN=CHR$(14)
60 COLOR,1:CLS:GOSUB 230:SYMBOL(176,188),"by J Weaver Jr",2,1,0,0:SYMBOL(624,0),
IN,2,1,5,0:COLOR,0
70 LINE(488,188)-(639,198),1,BF:C0=-1:A=-1:I=INKEY$
80 I=INKEY$:IF I="" THEN A=(A+1)MOD 13:CO=(CO+1-SGN(A))MOD 6:SYMBOL(8+A*16,188),
MID$(IR,A+1,1),2,1,CO+2,0:SYMBOL(424+A*16,188),MID$(IK,A+1,1),2,1,CO+2,0:GOTO 80
ELSE IF I=CHR$(27) THEN POKE PL,8-PEEK(PL):SYMBOL(624,0),IN,2,1,PEEK(PL)/2+1,0
90 LINE(0,188)-(639,199),1,BF:SYMBOL(8,188),IR,2,1,2,0:SYMBOL(424,188),"next tra
p: 10",2,1,2,0:X=41:Y=12:V=4:GOSUB 230:SC=0:DUR=10:GOSUB 160:T=0:I=INKEY$
100 I=INKEY$:IF I>" THEN Z=ASC(I)-27:IF Z>0 AND Z<5 THEN V=Z ELSE IF Z=0 THEN P
OKE PL,8-PEEK(PL):SYMBOL(624,0),IN,2,1,PEEK(PL)/2+1,0
110 XN=X+X(V):YN=Y+Y(V):IF COLOR(XN*8,YN*8-1)=0 THEN COLOR 7:LOCATE Y,X:PRINT IH
;:X=XN:Y=YN:L=L(6)+1:P6(L,1)=X:P6(L,2)=Y:L(6)=L:LOCATE Y,X:PRINT IP; ELSE X=41:Y
=12:V=4:M=6:GOTO 190
120 M=(M MOD 5)+1:IF OU(M) THEN 120 ELSE COLOR M+1:LOCATE BY(M),BX(M):PRINT IH;:
Z=(RND(1)*24)MOD 24+1:FOR A=1 TO 4:VV=DO(Z,A):XN=BX(M)+X(VV):YN=BY(M)+Y(VV):IF C
OLOR(XN*8,YN*8-1)=0 THEN BX(M)=XN:BY(M)=YN ELSE NEXT:GOTO 180
130 L=L(M)+1:P(M,L,1)=XN:P(M,L,2)=YN:L(M)=L:LOCATE YN,XN:PRINT IP;:F=M*10+100:CA
LL &H100,F,DUR

```

ENHANCE WordStar with P-r-o-p-o-r-t-i-o-n-a-l Spacing on WordStar

You are reading text printed by WordStar in proportional spacing, providing a professional, easy to read, typeset appearance, direct from the print command on any version of WordStar. Also print two or more columns on a page, underline spaces between words, and much more. Works with most letter quality printers (Diablo, Qume, NEC, Juki, Brother, C. Itoh, Silver Reed, others).

"The best and least expensive method of dramatically improving the appearance of any WordStar text" - LIST
Disk version (CP/M, MS/PC-DOS) automatically modifies WordStar \$75 including manual. Manual only (100 pages - with full details for implementing PS using Install) \$25. No technical skill is needed. Text can be right justified. Printer does not require PS logic. Prices include shipping in U.S. NYS add tax.
Okay! My check is enclosed for \$..... (or charge my VISA/MC acct # exp).

Writing Consultants

Suite 253, 11 Creek Bend Drive - Fairport, NY 14450
1-800-828-6293 (in NYS 1-716-377-0130)
phones open 24 hours - dealers please call or write



Samurai Systems division of Pascal & Associates

Sanyo 550-2	\$795	Multiplan	\$145
Sanyo 555-2	1195	dBase II	375
Teac 55B	200	Turbo Pascal	50
Memory 128K	100	Turbo (8087)	80
RS232C Port	75	Books	395
Anchor MK XII	285	Typefaces	100
Panasonic 1090	275	DBX	50
Panasonic 1091	345	Pansi (comm.)	75
Toshiba 1340	750	Hayes Joystick	39
Toshiba 1351	1250	Printer Cable	35
Taxan 12" Amber	125	Modem Cable	35
Sanyo CRT 30	120	8087 NDP	225

NEC APCIII (call for prices)

MasterCard
Visa
Money Order

Pascal & Associates (800) 972-7225
136 East Rosemary Street (800) 642-0949
Chapel Hill, NC 27514 (919) 942-1411
Free 800 telephone support

INTELLICOM

MAKES YOUR COMMUNICATIONS EASY

NOW AVAILABLE FOR THE SANYO 550/555 COMPUTER, Intellicom allows you to "reach out" and tap the tremendous number of information data bases available within easy reach of your telephone. Information services such as The Source, CompuServe, Dow Jones and Newsnet can easily be accessed. Communicate with your office mainframe and transfer files while in the comfort of your home. Check into remote bulletin board systems and download free public domain software. Send and receive electronic mail. The list of possibilities is limited only by your imagination. Intellicom provides the INTELLigent COMMunications program your Sanyo needs.

Don't Compromise. Your Sanyo PC can be the smartest terminal you could ever hope for. Intellicom is a full feature terminal emulation program that allows you to choose from a menu of terminals that include:

- Digital VT52
- Digital VT100
- Televideo 912/920
- Televideo 910
- ADM3A
- Simple TTY

Both binary and text files can be transferred using simple ASCII, ASCII Capture, Xon/Xoff, XMODEM and CompuServe A protocol! You can operate at any speed up to 4800 baud!

Intellicom features an easy to use menu selection system with a built in Help facility that leaves the reference manual on the shelf.

Autodial directories are supported (requires Hayes or equivalent modem) as is simultaneous printer operation. Version 2.1 even includes a DOS WINDOW that allows you to actually run another program concurrently!

If you're linking to an in-house digital DecSystem 10, 20 or VAX, the mainframe host support code that is provided, at no extra charge, can save your company a bundle!

Hard to believe? Send us \$15.00 and we'll ship you a completely functional demo version. We are sure you will agree Intellicom V2.1 is the best price performer on the market today.

Please note version 2.1 of Intellicom requires MSDOS 2.0 or higher. Terminal emulation includes most or all attributes of the specific terminal emulated. A less extensive version is available for users with MSDOS 1.25 (Intellicom 1.9S).

INTELLICOM is priced at only \$69.95

Order INTELLICOM from your local Sanyo dealer or direct from:

THE COMPUTER TOOLBOX

1325 East Main Street — Waterbury, Conn. 06705
Telephone (203) 754-4197

MasterCard, Visa and COD orders are welcome. Specify DOS Version when ordering. Connecticut residents add 7½% sales tax — orders (except for demo version) add \$5.00 for shipping.

COMPARE AT ANY PRICE


```

140 PSET(T,199),7:PSET(T+1,199),7:T=T+2:IF T<640 THEN 100 ELSE LINE(424,188)-(63
9,198),1,BF:SYMBOL(488,188),"game over",2,1,5,0:D=600:F=100:CALL &H100,F,D:IF SC
>HI THEN HI=SC
150 LINE(0,188)-(197,198),1,BF:IR="Record:"+STR$(HI)+" ":GOTO 70
160 L(6)=1:P6(1,1)=X:P6(1,2)=Y:ML=5:FOR M=1 TO 5:L(M)=1
170 BX(M)=(RND(1)*37)MOD 37+1)*2+1:BY(M)=(RND(1)*22)MOD 22+1:IF COLOR(BX(M)*8,B
Y(M)*8-1)>0 THEN 170 ELSE COLOR M+1:LOCATE BY(M),BX(M):PRINT IP;:P(M,1,1)=BX(M):
P(M,1,2)=BY(M):NEXT:LINE(600,188)-(615,198),1,BF:SYMBOL(600,188),"1",2,1,2,0:RET
URN
180 ML=ML-1:SC=SC+(5-ML)*10:GOSUB 240
190 GOSUB 210:IF ML>0 AND M<6 THEN LINE(600,188)-(615,198),1,BF:SYMBOL(584,188),
STR$(6-ML),2,1,2,0:GOTO 140 ELSE IF ML=0 THEN D=5:FOR F=200 TO 10 STEP -5:CALL &
H100,F,D:T=T-2:PSET(T,199),1:PSET(T+1,199),1:NEXT
200 GOSUB 230:GOSUB 160:GOTO 140
210 OU(M)=-1:D=5:COLOR M+1:IF M<6 THEN FOR A=1 TO L(M):LOCATE P(M,A,2),P(M,A,1):
PRINT IE;:F=A*10:CALL &H100,F,D:NEXT:RETURN
220 FOR A=1 TO L(M):LOCATE P6(A,2),P6(A,1):PRINT IE;:F=A*10:CALL &H100,F,D:NEXT:
RETURN
230 FOR M=1 TO 6:OU(M)=0:NEXT:LINE(16,8)-(623,183),0,BF:RETURN
240 LINE(232,188)-(383,198),1,BF:SYMBOL(296-LEN(STR$(SC))*16,188),STR$(SC),4,1,6
,0:RETURN
250 DATA EB,2,0,0,FA,8B,EC,1E,C5,5E,8,8B,F,C5,5E,4,8B,17,E,1F,2E,89,E,2,1,B8,35,
0,34,8,E6,3A,FE,CC,75,3,4A,74,9,E2,F7,2E,8B,E,2,1,EB,EC,34,8,3C,35,75,2,E6,3A,1F
,CA,8,0
260 DATA 1,2,3,4,1,2,4,3,1,3,2,4,1,3,4,2,1,4,2,3,1,4,3,2,2,1,3,4,2,1,4,3,2,3,1,4
,2,3,4,1,2,4,1,3,2,4,3,1,3,1,2,4,3,1,4,2,3,2,1,4,3,2,4,1,3,4,1,2,3,4,2,1,4,1,2,3
,4,1,3,2,4,2,1,3,4,2,3,1,4,3,1,2,4,3,2,1
270 DATA -2,0,2,0,0,-1,0,1

```

AA COMPUTER EXCHANGE

"SOUTH'S LEADING SANYO DEALER"
COMPLETE SELECTION OF SANYO SOFTWARE

COMPLETE REPAIR SERVICE FOR SANYO 550
SERIES COMPUTERS AND PERIPHERALS

ORDER LINE: 1-800-447-0088
INQUIRIES & FL: 904-388-0018

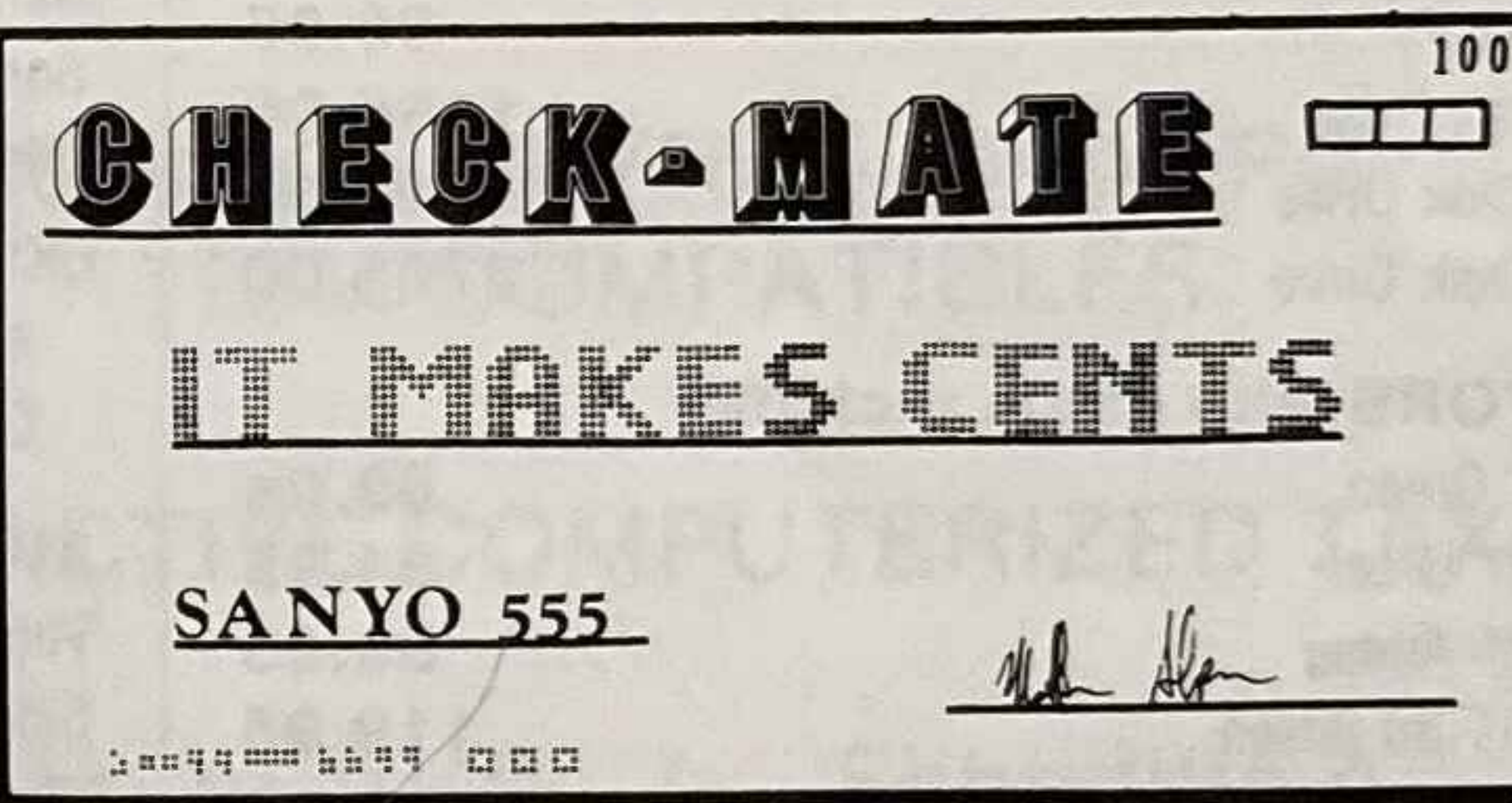
REQUEST OUR FULL SANYO CATALOG TODAY

HERE ARE A FEW OF OUR MAIL ORDER PRICES

HARDWARE		NORELL		OLYMPIC	
Sanyo 550-1 (1-160K)	669	Easytext	55	Inventory	75
Sanyo 550-2 (1-360K)	699	Easyproof	34	Payroll	75
Sanyo 555-1 (2-160K)	899	Easycalc	68	General Ledger	75
Sanyo 555-2 (2-360K)	999	Swiftsort	55	Accts. Receivable	75
6M Hard Disk Level IV	1465	LISP/88 Intrp.	34	Accts. Payable	75
10M Hard Disk SPC	1564	Computer Chef	34	Order Entry	75
160K Teac Drive	119	Original Adv.	17	Postmaster II	38
160K Teac Drive w/SW	263	Hermit's Secret	17	Money Analysis	29
360K Teac Drive	169	Phantom's Revenge	17	Finance Manager	29
360K Teac Drive w/SW	359	Word Wiggle	24	Appointment Book	29
64K Mem Exp (150 NS)	48	Munchkin	17	Touch Skills	29
128K Mem Exp (150 NS)	96	Eliza	17	States & Capitals	23
Joystick	20	Monster Rally	17	Body Systems	29
RS-232 Card	69			Trivia Mania	29
300 Baud Modem	52			Flyboy Flight Sim.	29
300/1200 Modem	255			Byte Buster	23
Comp/RGB Monitor 13"	269			Flash Card	23
Sanyo RGB Monitor 13"	565			Blackjack	30
Green Monitor 12"	99			Spelling Bee	30
Amber Monitor 12"	99				
Panasonic 1091 NLQ	316				
TTX Daisy w/Tractor	367				
TTX 64K Buffer	199				
Silver Reed EXP 500	370				
Silver Reed EXP 550	438				
EXP 550 Tractor	116				
Sanyo PR5000 LQ	402				
Sanyo PR5500 LQ	622				
PR5500 Tractor	150				
BASF DS/DD 5 1/4"	25				

2726 PARK ST., JACKSONVILLE, FL 32205

Orders with cashiers check, money order and VISA/MC shipped promptly • For personal/company checks allow 3 weeks for clearance • No CODs • For VISA/MC add 3% • Shipping charges extra, \$3.00 minimum
• Prices may differ in AA stores • Florida residents add 5% tax • Prices subject to change without notice.



- CHECK-MATE is a Complete Home Book-keeping System for your personal computer.
- CHECK-MATE Will help you keep track of up to 100 different account categories.
- CHECK-MATE allows you to keep 30 payee's on file.
- CHECK-MATE will grow with you.
- You may add on CHECKWRITER, which allows the computer to print out checks.
- You may also add HOME-BUDGET which will give you better control of your finances.

All For A Low Price Of
\$59.95

DEALER INQUIRIES INVITED

GM ASSOCIATES

710 N. New Ballas Rd.
Creve Coeur, MO 63141
(314) 997-SOFT



SANYO SYSTEMS SPECTACULAR SAVINGS

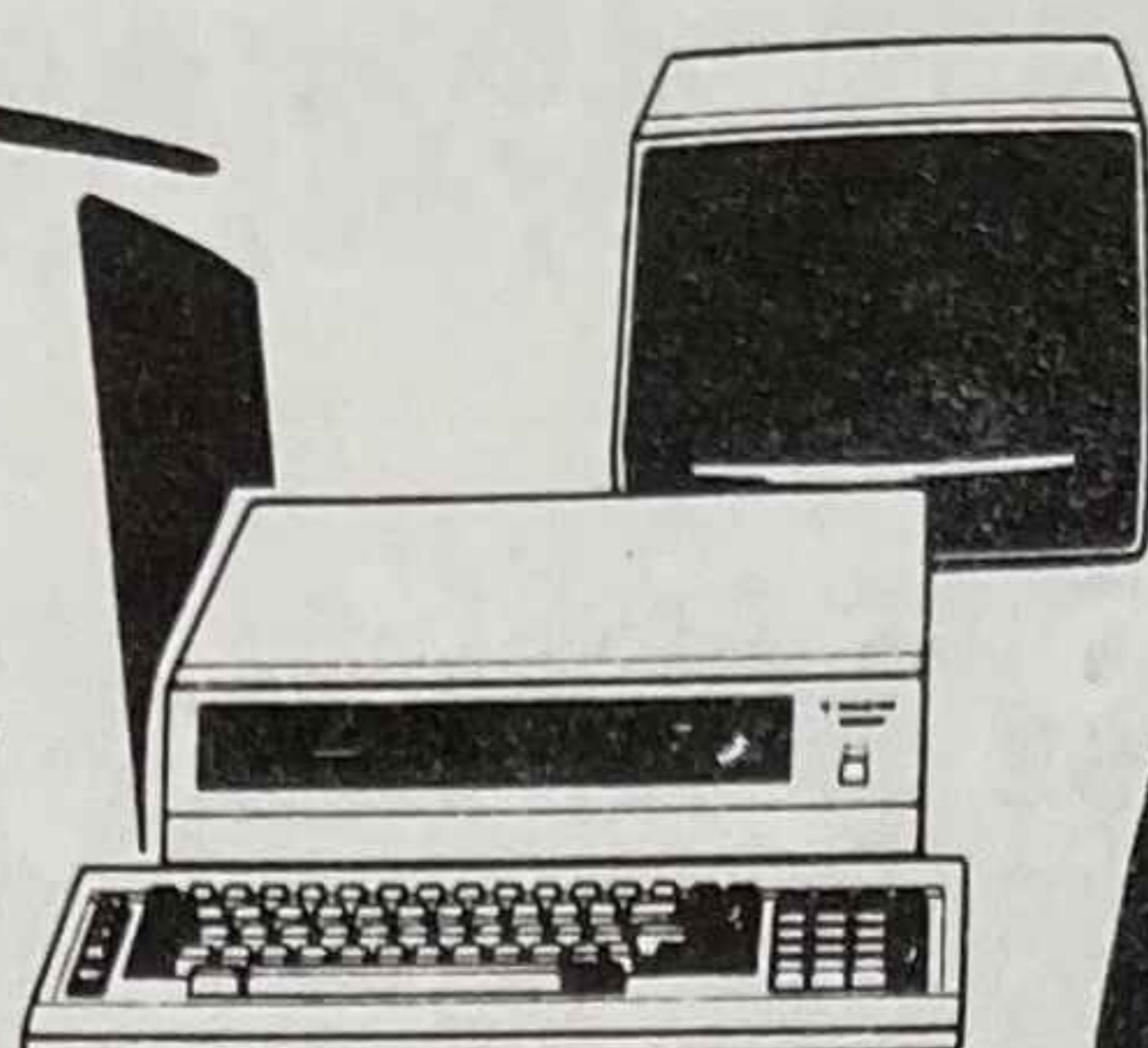
SANYO MBC 550-2
with single DS/DD 360K Drives
YOUR CHOICE:
Sanyo DM2112N - 12" Green or Amber Monitor
FREE SOFTWARE:
Wordstar • Calcstar • Easywriter I • Sanyo Basic
• MS-DOS (2.11)

**GEMINI 10X (120 CPS Dot Matrix)
and Printer Cable**
\$1099

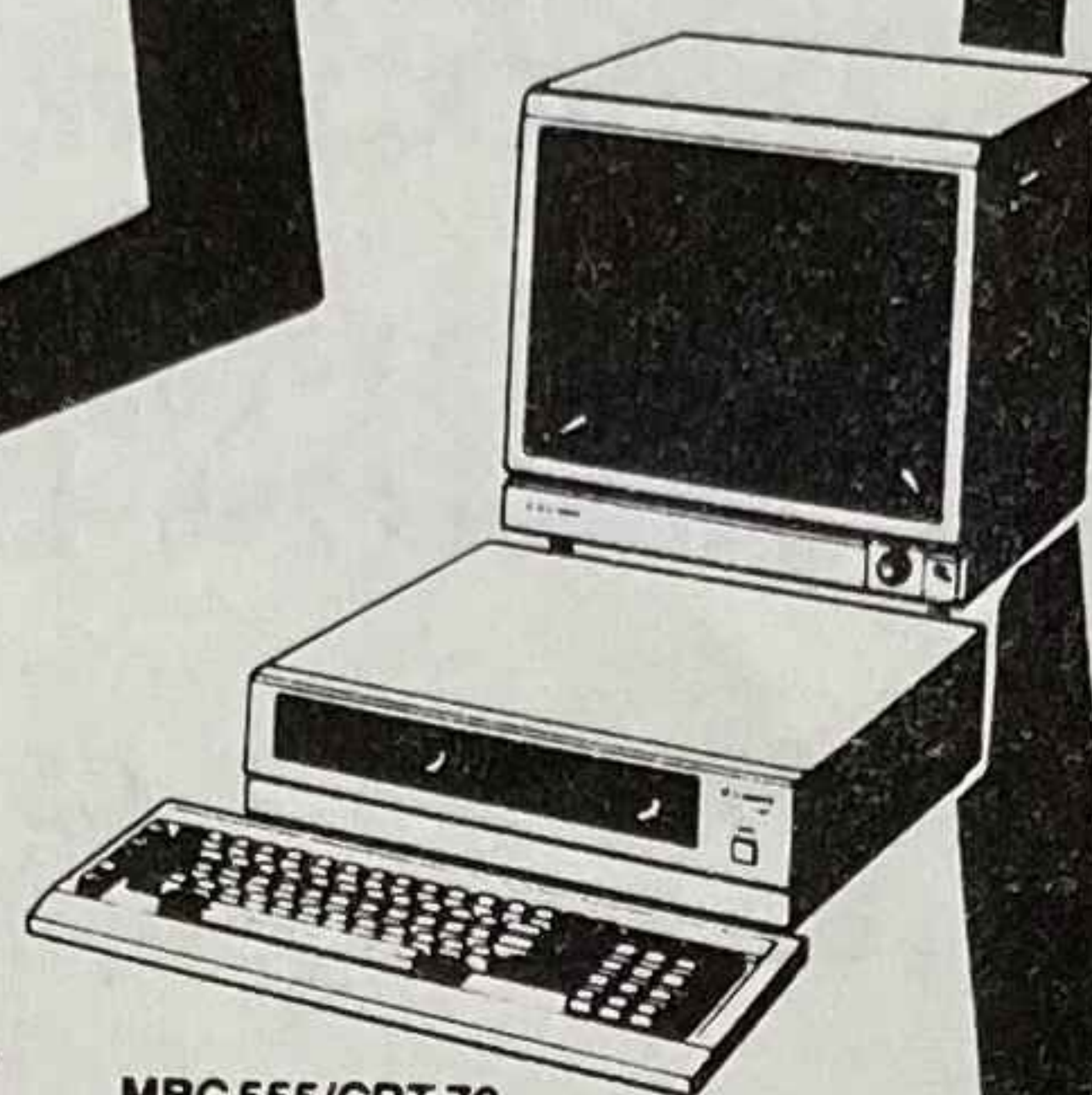
Pkg. No. 1

**TTX (12 CPS Letter Quality)
and Printer Cable**
\$1229

Pkg. No. 2



MBC 550/CRT 36



MBC 555/CRT 70

SANYO MBC 555-2
With Two DS/DD 360K Drives
Your Choice:
Sanyo DM 2112N - 12" Green or Amber Monitor
Free Software:
Worstar • Calcstar • Easywriter I
Mailmerge • Spellstar • Infostar
Sanyo Basic • MS-DOS (2.11)

**GEMINI 10X
(120 CPS Dot Matrix)
and Printer Cable**
\$1499

Pkg. No. 3

**TTX (12 CPS Letter Quality)
and Printer Cable**
\$1569

Pkg. No. 4

**LET US CUSTOMIZE A
SANYO COMPUTER SYSTEM
TO FIT YOUR NEEDS**

COMPUTERS

550-2 w/software	769.95
555-2 w/software	1139.95
360K DS/DD Drive w/software	389.95
360K DS/DD Drive	189.95
RS 232C	74.95
128K Memory	99.95
5 Meg Disk Drive	1195.00
10 Meg Disk Drive	1895.00
20 Meg Disk Drive	2795.00

MONITORS with cable included

Sanyo 9" Green	69.95
Sanyo 12" Green	84.95
Sanyo 12" Amber	89.95
Sanyo CRT 30 Green	119.95
Sanyo CRT 70 Color	599.95
NEC RGB Hi-Res Color	379.95

PRINTERS

Gemini 10X (80 column)	259.00
Gemini 15X (136 column)	379.00
Delta 10 (80 column)	360.00
Radix 10 (80 column)	539.00
Powertype Daisywheel	339.00
Epson RX-80 (80 column)	279.00
Epson RX 80 FT (80 column)	359.00

Epson FX-80 (80 column)	499.00
Epson FX-100 (136 column)	749.00
Okidata 92P	449.00
Epson RX 100 (136 column)	439.00
TTX Letter Quality Printer (incl. Tractor Feed)	359.95
Sanyo PR 5000 (13")	399.00
Sanyo PR 5500 (17")	599.00
Printer Cable	24.95

OKIDATA 4-COLOR DOT MATRIX PRINTER

Apple, IBM, C-64 or Atari	
Cable Included	\$269.95

MODEMS - Cable included

Volkmodem (300BAUD)	69.95
Signalman Mark X (300 BAUD)	129.95
Signalman Mark XII (300/1200 BAUD)	259.95

SANYO AUTHORIZED SERVICE CENTER

Call for prices and services!

HARDWARE COVERS

550/555 Keyboard	9.95
Printer Covers	7.95
Monitor Covers	14.95

GENERIC DISKS at FANTASTIC PRICES!!

GENERIC DISKS AS LOW AS 99¢ ea.

Generic 100% Defect-Free/Guaranteed.

Includes sleeves, labels, write protect tabs, reinforced hub rings, lifetime warranty.

	SS/SD	SS/DD	DS/DD
DISKETTES 1 or 2 bxs.	12.99	14.99	17.99
(1 bx. min.) 3-9 bxs.	11.50	13.50	16.50
10 per bx. 10+ bxs.	9.90	11.99	14.99

DISKETTE/CARTRIDGE/CASSETTE FILES

Flip 'N' File 10	3.95
Flip 'N' File 15	6.95
Data Defender	16.99
Flip 'N' File/The Original	16.95
Disk Bank	3.99
Colored Library Case	2.99
Disk Bank/5 (holds 50)	12.99
Power Strip (6 outlet)	16.95
Lineguard Spike Suppressor	13.99
Disk Drive Cleaning Kit	11.99
Ring King Wallet (holds 10 disks)	4.99
Ring King Wallet (holds 20 disks)	7.99
Joystick	24.95

To order call TOLL FREE
1-800-824-7506
ORDER LINE ONLY

COMPUTER CREATIONS, Inc.
P.O. BOX 292467 - DAYTON, OHIO 45429

For information call: (513) 294-2002 (Or to order in Ohio)



No extra charge
for MasterCard
or Visa

Order Lines Open 8:30 a.m. to 8:00 p.m. Mon.-Fri.; 10:00 a.m. to 4:00 p.m. Sat. (Eastern Standard Time). Minimum \$10 per order. Prepaid Money Order - Free shipping C.O.D. (Add \$2.50). All prices are subject to change without notice. Call toll free number to verify prices and availability of product. Actual freight will be charged on all hardware. Software and accessories add \$3.50 shipping and handling in Continental United States. Actual freight will be charged outside U.S. to include Canada, Alaska, Hawaii, Puerto Rico. Ohio residents add 6% sales tax. Call for return authorization number before sending back any product.

INPUT/ OUTPUT

By Tim Purves
Soft Sector Contributing Editor

(Tim Purves is an expert on the Sanyo 550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC. He is available to answer any questions that the readers of SOFT SECTOR might have. All questions should be addressed to SOFT SECTOR, P.O. Box 385, Prospect, Ky. 40059.)

Q. After installing my dual double-sided, double-density drives, I noticed that both heads "clap down" when only one drive is being accessed. To minimize wear and tear, how can I correct this?

*Steven O'Harra
San Diego, CA*

A. Most drives, as shipped from the factory, have the head load connected to the motor "on" signal. Some computers work better this way, since the head will be stable by the time the computer accesses the drive. The Sanyo, however, can run with the head load on select. This can be changed by moving the jumper from "HM" to "HS," which will cause the head only to be loaded when the drive is being accessed. Only drives with head load solenoids need to be configured this way; on drives with no head load solenoids, such as the older TEAC drives, the jumper can be in either position.

Q. Our 2.11 MS-DOS allows us to redirect program output to disk files or other devices. I have tried to redirect the output of a BASIC program to a file using DOS redirection. It doesn't seem to work.

*Steven O'Harra
San Diego, CA
Continued on Page 42*

**We take the BYTE
out of high prices!**

Comp-U-Type

Accessories

RS-232C PORT	69.95
ANCHOR MARK XII	279.00
ANCHOR MARK X	149.00
HAYES 300	209.00
6' KEYBOARD EXTENDER	9.95
10 DS/DD DISKETTES	21.95
WORDSTAR TEMPLATE	9.95
BASIC REFERENCE MANUAL	30.00
DATASTAR REFERENCE	30.00
REPORTSTAR REF. MANUAL	45.00
MS-DOS 1.25 REF. MANUAL	49.00
64K RAM EXPANSION	60.00
COMPUSERVE KIT	31.95

Printers

GEMINI 10X	289.00
PANASONIC KX-P1090	249.00
PANASONIC KX-P1091	349.00
OLYMPIA RO LETTER QUAL	349.00
COMREX CR-1	549.00

Software

PAYROLL OR INVENTORY	69.95
ACCOUNTS PAYABLE OR RECEIVABLE	79.95
GENERAL LEDGER	79.95
ORIGINAL ADVENTURE	24.95
PICTURE PURRFECT	24.95
SOLITAIRE	34.95
MI-TERM MODEM SOFTWARE	65.00
DS-DOS	49.95
PHANTOM'S REVENGE	24.95

Visa, MC add 3%. Personal checks allow 10-15 days to clear.
No CODs. In MD add 5% tax. Add 3% for shipping, \$3.00
minimum. Send for free Sanyo catalog.

Comp-U-Type

P.O. Box 777, Millersville, MD 21108

(301)987-4272



SANYO 550/555 — IBM-PC
IBM COMPATIBLES

INTERACTIVE COMPUTERIZED TAXING

Form 1040 /	Schedule A
Schedule B /	Schedule C
Schedule E /	Schedule G
Schedule W /	Form 2106
Form 3903 /	Form 4562

Any combination of 5 Tax Programs	\$26.95
order all Tax Programs for	\$52.95

Tax Programs use 8.5 x 11 copies of original IRS forms.
Notifications will be sent out immediately for updates.
GAME: BLACK JACK with graphics, Sanyo only!
Insurance, Doubledown, Vegas style \$16.95

Free amortization program with source written in C
with any order. Runs on IBM!

A.J. SOFTWARE

P.O. Box 11581, Pittsburgh, PA 15238

Call to order:
(412) 963-1754
(412) 963-3806



VISA/MC
ADD 3%

BINARY TREE TECHNOLOGY

(513) 879-4214

P.O. BOX 1757, FAIRBORN, OHIO 45324

COMPUTERS

MBC 550-2 (1 360K)CALL
MBC 550-2 (2 360K)CALL

ACCESSORIES

180K DRIVE\$119
360K DRIVE169
640K DRIVECALL
8087 APU CHIPCALL
A,B,C,D Drive CableCALL
RS-232 + MODEM SOFTWARE ..99
RS-23259
64K MEMORY (150NS)64
128K MEMORY (150NS)105
JOYSTICK29
550 COMPUTER COVER19
6' KEYBOARD CABLE18
PRINTER CABLE24
RGB MONITOR CABLE20
AUTO DIAL/ANSW MODEM...149
330 BAUD MODEM65
DISK HOLDER (HOLDS 100)15
DUAL JOYSTICK ADAPTER15

PRINTERS

POWERTYPE (18 CPS LQ)\$399
SANYO PR-5000 (LQ)399
DYNAX-15 (LQ)399
BLUECHIP 120CPS279
RITEMAN 120CPS269

SOFTWARE FOR SANYO

STOCK MARKET\$99
STATISTIC PACKAGE49
8088 ASSEMBLER TUTORIAL ...39
SANYO BASIC TUTORIAL49
BINARY TREE FORTH99
BIORHYTHM19
CRAZY 829
BLACKJACK29
BOUNCEOUT15
STATE CAPITOL QUIZ29
BINARY TREE CHESS39
MATHQUIZ I29
MATHQUIZ II29
ASYNC (MODEM S/W)49
ADVENTURE I (128K)29
MAIL LIST HANDLER39
SCREEN DUMP39
FINANCE PLUS39
BINARY TREE UTILITY55
INVENTORY69
PAYROLL69
ACCOUNTS RECEIVABLE69
ACCOUNTS PAYABLE69
CP/M EMULATOR80
GRAPHICS PACKAGE69
COPYLINK80
PASCAL COMPILER45
FORTRAN 87299

DEALER & DISTRIBUTOR INQUIRIES INVITED

PRICES MAY REFLECT A 3 PERCENT CASH DISCOUNT. MC & VISA, MONEY ORDER, CASHIERS CHECK ACCEPTED. PERSONAL OR COMPANY CHECKS REQUIRE 2-3 WEEKS TO CLEAR. SHIPPING & HANDLING EXTRA. OHIO RESIDENTS ADD 5.5 PERCENT TAX. 20 PERCENT RESTOCKING FEE FOR ALL RETURNED MERCHANDISE.

Continued from Page 26

BY THE PEOPLE, FOR THE PEOPLE

Editor:

I am starting a Sanyo public domain software library and would like to have contributions from Sanyo users. All programs will be available free to any user for the price of the diskette and postage.

At the present, I only have programs that I have written myself, as well as some public domain IBM programs that will run on the Sanyo.

Contributors will receive a current list of the library on a bimonthly basis. Programs and inquiries may be sent to: 1804 S. 19th, 98405.

Charlie Quante
Tacoma, WA

ROUND THREE

Editor:

With regard to Mr. Zurofsky's letter [October '84, Page 7] in which he responded to my criticism of his publication, several important factors ought to be clarified for your readers.

He has stated that I am not in his database of registered buyers (of his publication) or in his database of registered owners of Sanyo computers. Neither contention is germane to the issue of my dissatisfaction with his book.

Nonetheless, enclosed you will find a copy of my cancelled check for \$19.45, mailed to Computer User Services for purchase of that book after I was solicited to do so by Mr. Zurofsky. I tried to obtain a refund in April of this year, firm in my belief that communication skills are the foundation of any writing, but my letter was not answered.

The issue of Mr. Zurofsky maintaining a database of registered Sanyo owners smacks of invasion of privacy, as that is a matter solely between Sanyo and myself. I am a registered owner, as can be certified by them. How Mr. Zurofsky obtained my name and address (the advertisement for his book arrived only days after my MBC-555 purchase) is a matter of concern to me and I will take this up directly with Sanyo.

Finally, Mr. Zurofsky claims to have received only a handful of complaints about his product, of which about 3,000 copies have been sold. As one trained in social psychology, I would point out that silence does not prove satisfaction; as often as not, it reflects apathy, frustration or pessimism.

Robert E. McCoy
Mt. Ranier, MD

Editor:

It has been interesting to read "Letters to the Editor" and note the cross fire between a purchaser of the *Personal Computer Handbook* in the September issue of *SOFT SECTOR* and the rebuttal in the October issue.

I'm afraid I have to agree with Mr. McCoy that the book promises more than it delivers. Having secured the volume from my local

computer store, I was disappointed to find very little that wasn't available in the Sanyo manual. I must also agree that the book was poorly printed and contained numerous typos and poor grammar.

My purpose in writing is to offer the hope that you won't be intimidated by advertisers. You have provided a forum for both sides, but if your readers don't have the opportunity to express conflicting opinions, then the integrity of the magazine will be lost.

Keep up the good work.

William M. Herst
Denver, CO

Editor:

... I want to reinforce the comments of the man who wrote to you in the September issue of your magazine. He mentioned the so-called *Personal Computer Handbook* published by Computer User Services of Hackensack, N.J. In addition to the

GOOD STUFF!

SANYO 550/555
TANDY 2000
IBM-PC

GREAT PROGRAMS!
SUPER LOW PRICES!!!

Looking for good low cost programs for your Sanyo? Business, financial, games, educational and more! 10 different diskettes by subject. Each has 10 programs, all in listable basic. Each only 8.95 postpaid. To find out more send \$5.00 for our super sampler diskette, with 10 great programs - games, mortgage amortization and others. Full info on our other products and our newsletter will be enclosed.

BLANK DISKS

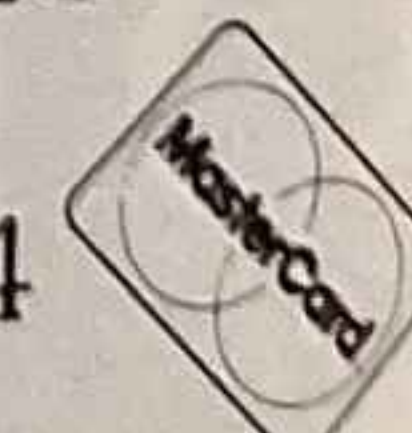
Prime Verbatim Datalife. 5 yr. mfg. warranty in plastic box. Sold everywhere for \$30-\$35. Only \$23.50 postpaid!

SUPER MAILING LIST

Add, change, delete names, address, phone with 8 category flags to select on. Prints lists or labels. Sorts on zip or name. A random access tutorial in itself. \$14.50 postpaid.

COMPUTER SOLUTIONS

P.O. Box 354
Mason, MI 48854
(517) 628-2943



comments made in that letter, I would like to say that I really resent the more than 23 dollars I spent on something that would barely qualify as an introduction to the more reputable books on the market, and worth that only if it were carefully rewritten.

I think that the shortcomings of the Sanyo marketing policies feed into these kinds of excesses. Please formally warn your readers of the negative comments about that publication; I think you have a moral obligation to do so. . . .

*J. Robb Wilson
Casa Grande, AZ*

Editor's Note: Alright, already. If we had a moral obligation, then we have surely fulfilled it. This subject appears to be popular, but let's put it to rest.

REVIEWING REVIEWS

Editor:

Computer Control Systems, Inc., would like to thank your magazine and Mr. G.L. Swearingen for the review of our product, *DB-FABS*, that appeared in your November, 1984 issue.

On the whole, it was a good, well-written presentation of the quality of *DB-FABS*. However, I would like to take this opportunity to clarify two areas of misunderstanding that appeared in the review.

Concerning the statement that C.C.S. had not provided an entry point into *DB-FABS* for use with Sanyo BASIC and that no

immediate solution is available is due to the fact that, at the time we contacted Sanyo, the technical information needed for us to provide an entry point was unavailable for release at that time. We will keep in close contact with Sanyo and will implement an entry point for Sanyo BASIC as soon as possible.

In the paragraph concerning the development of application programs around *DB-FABS* appears a quote from our representative stating: "Only an OEM license from them is needed for any applications programs you write and want to market with their run-time module, and not the separate purchasing of a run-time module for each application sold." This statement is not accurate and is misleading.

An applications programmer, to use our product in a program for resale, does have to obtain an OEM-Software License from us. The programmer purchases the right to reproduce our run-time module *and* our stand-alone module for a specified number of times. We sell blocks of serial numbers on a stairstep, cumulative basis with the prices per serial number decreasing with quantities purchased over the life of the contract. Our prices are competitive and below those of most programs of this type and quality.

With this licensing arrangement, the programmer is able to reproduce, not only the run-time module, but also the stand-alone module, which allows the end user of his applications program to perform

many functions without the need of additional reprogramming efforts.

We apologize for any misunderstanding caused by the mis-statements or the mis-interpretation of the quotes of our representative and appreciate the opportunity to clarify these two points of information. We will be happy to supply additional information concerning our products and our OEM-Software License Agreements upon request.

*Kay A. Murray, Business Manager
Computer Control Systems, Inc.
298 21st Terrace S.E.
Largo, FL 33541*

Editor:

Your review of *Intellicom* [October '84] seems to leave the impression that the loss of the DTR signal (which can cause a Smartmodem to disconnect) is the fault of the program. To be fair to the competition, it is a function of the Sanyo itself, and occurs whenever one of the disk drives are activated, as the computer is obviously not ready to interpret incoming RS-232 data while reading or writing the disk. Rather than reconfiguring the cable, the easiest way around this problem is to program the Hayes to ignore the DTR signal by setting the first DIP switch behind the Smartmodem's front panel to the down position.

*J. Weaver Jr.
Factory Programming
Monroe, MI*

Continued on Page 76

The Software Source

Mon. thru Fri., 11-8
Sat. 10-6
Closed Sunday

We Guarantee to Ship Within 24 Hours

YOUR SANYO SOURCE

Sanyo MBC-550	599.95
Sanyo MBC-550-II	CALL
Sanyo MBC-1150	999.95
Sanyo RS-232 Serial Port	79.95
Epson RX-80 Printer dot matrix 80 CPS	279.95
Brother HR-15 Printer letter quality	419.95

All Sanyo Computers Come With Software

**We Guarantee the Lowest Price
in the Country**

Dealer Inquiries Welcome

502/456-5011

3034 Bardstown Rd., Louisville, Ky. 40205

The Software Toolworks presents: THE FUTURE

WELCOME TO THE FUTURE, FOLKS.
THE COMPUTER AND THE SOFTWARE
THAT MAKES IT TICK.



THE CHILDREN OF
THE FUTURE. PLAYING
*ADVENTURE, WORD
WIGGLE, AND MYCHESS.*
LEARNIN' COMPUTER
OPERATION AND
HAVIN' A GOOD
TIME.

THAT'S NOT THE WAY
YOU SPELL SILICON.

OH.



THE PARENTS OF THE FUTURE. USING
MYCALC TO ADJUST THE FAMILY BUDGET AND
COMPUTER CHEF TO PLAN TONIGHT'S DINNER.



MOM! DAD! "THE A-TEAM" IS ON TV!

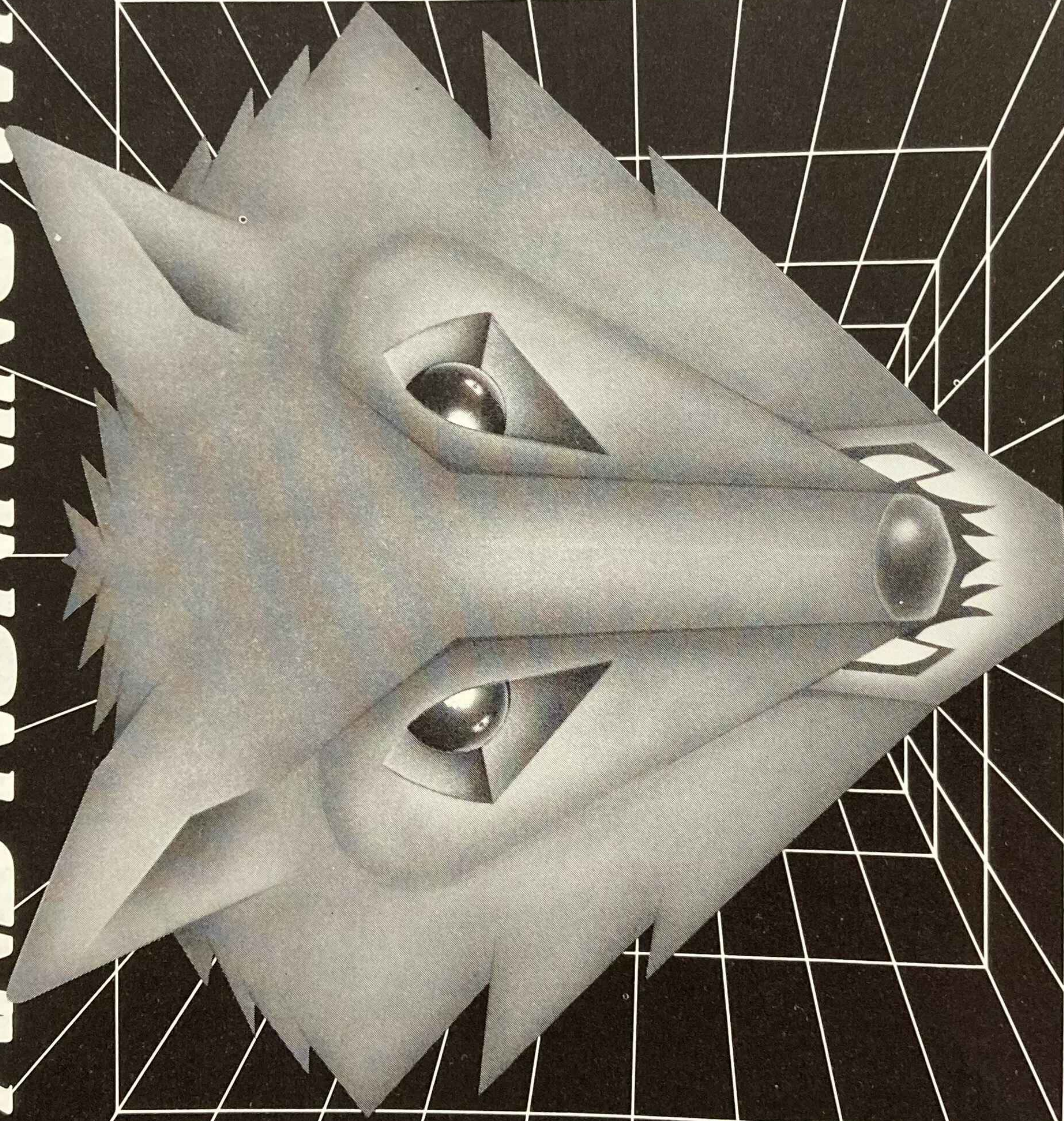
WELL, ALMOST THE FUTURE.



Languages, games, productivity software, computer cookbooks and more are formatted for IBM PC, PCjr, most CP/M systems and Heath/Zenith HDOS. They range in price from \$19.95 to \$59.95. For a free 41 product catalog contact The Software Toolworks, 15233 Ventura Blvd., Sherman Oaks, CA 91403. (818) 986-4885.

© 1984, a registered trademark of Digital Research

UP AND RUNNING WITH



THE VIDEO

The Sanyo MBC 550 series computer. Beneath that humble gray exterior there lies a wolf. A powerful, world class PC that can give you compatibility, speed and storage. Inside your machine a new world of computing power awaits you. Greywolf Technologies offers you the products you will need to unleash the wolf.

HARD DISK DRIVE — MEGA BYTES WITHOUT MEGA BUCKS

Our 10 megabyte hard disk, the HD10, gives power and performance at a price that is equally unbeatable. The external unit combines the highest quality hardware with the most flexible and sophisticated software available. The system comes with everything that you will need including:

- ★ over 60 times the storage of a standard 160K floppy diskette. ★ faster operation, running almost twenty times the speed of floppy disks. ★ state-of-the-art Winchester technology using the highly reliable Shugart 10 megabyte hard disk. ★ a super-efficient switching power supply with built-in surge protection and AC line filtering. ★ fast, 700 KBS data transfer rate. ★ runs on the MS-DOS 1.25, 2.1 and the *Super*

System with user definable partitioning available on version 1.25 systems. ★ a SORTDIR program which produces alphabetized and sorted listing of your file directory. ★ the ability to run complex programs which previously only ran on XT computers.

CLOCK/CALENDAR BOARD — UP AND RUNNING IN REAL TIME

If the world ran on the clocks in the standard 550 series computers, Christmas would come in July. The clocks in these machines are turned off whenever the disk drives are used. For those who need something less surrealistic, the Greywolf Clock/Calendar board brings the accuracy and affordability of digital watches to computer time-keeping. For half the cost of many comparable boards for other computers, the Greywolf Clock/Calendar board:

- ★ will give you accuracy to seconds a month. ★ comes with built-in rechargeable battery. ★ will keep accurate time even if unplugged for weeks. ★ is easily set directly from the operating system.

GREYWOLF SUPER SYSTEM — TOP GRADE UPGRADE

The Greywolf *Super System* upgrade gives you power, flexibility and ease-of-use. New capabilities which are written into the BIOS of the upgrade offer unique ways to increase compatibility, storage, and speed without a second mortgage. The system can be purchased either as an upgrade kit for current 550 series owners or as an assembled system for those who need full functioning right from the start. The *Super System* upgrade consists of:

- ★ twin 800K Teac disk drives, preconfigured and fully guaranteed. ★ software offering virtually 100% disk compatibility across MS-DOS and PC-DOS including the ability to read, write and format disks from hundreds of computers including the IBM-PC, the DEC Rainbow and the Tandy Model 2000. ★ a built-in RAM disk program offering disk access which is hundreds of times faster than floppies, and allows the user to choose the number and size of RAM disks. ★ the SORTDIR program to alphabetize and sort the large directories that these drives can hold. ★ a certificate to purchase directly from Greywolf the top selling data base **Personal Pearl** for only \$99.95, a savings of \$200.00. **Personal Pearl** is a product of **Pearlsoft, Inc.**

MORE FOR SURE

We have a number of additional products, both here and now and up and coming. Available immediately is a serial board allowing the Sanyo to use modems, serial printers and other devices. The Greywolf Serial Board corrects problems found in standard designs and is less costly. Coming soon is a *Super System* running version 2.1 of MS-DOS and a number of other expansion items.

DEALER APPEALERS

Our products are available through qualified dealers across the country. Some products are designed specifically for dealers, such as our line of vertical market software. These systems can run on Sanyos, taking advantage of the hardware that we produce, or they can run on standard PC compatible hardware. Included in this line are point of sale packages for video rental and tire stores. Demonstration disks are available and dealer inquiries are invited on all of our products.

PACKING IT IN

If you own a Sanyo 550 series computer or are considering getting one, we can help you release its full potential. From software to hardware, from serial boards to hard disks, we offer quality without compromise at an affordable price. Call or write to see how easy it is to get all you can from your computer. Get up and running with **THE WOLF.**



18 Dog Lane, Storrs, CT 06268
(203) 429-9209

For orders and information call (203) 928-6555/(203) 928-3654

A. MS-DOS is very powerful in its support of pipes and files, which is the heart of I/O redirection. But it has its limitations. MS-DOS can only change the output of programs that use the *standard* I/O services in the DOS, typically the INT 21H calls. When Sanyo BASIC writes to the screen, it uses the Interrupt 10H and 17H calls to print to the screen or receive from the keyboard. Because of this fact, I/O redirection will not work from Sanyo BASIC.

Q. I purchased a Sanyo 555-2 to replace my aging TRS-80 Model I. Although I was pleased with my Model I, I wanted more memory, speed, etc. On the Model I, in BASIC, there was about 40K of usable RAM. I was shocked to find that on the 555, after entering BASIC under MS-DOS 2.11, there was only 28K of usable RAM. Is this correct? Does MS-DOS 2.11 and Sanyo BASIC take over 100K?

John Meyer
San Clemente, CA

A. There is no error in what you state. The biggest reason that MS-DOS takes over 100K is that MS-DOS is a memory resident DOS, where the TRS-80 DOSs were an overlay-driven DOS. The actual DOS on the TRS-80 is larger than MS-DOS.

The best thing to do is to add more memory. Sanyo BASIC, unlike any other BASIC for microcomputers, can and will use all available memory. Therefore, adding another 64K will give you 92K free, and adding 128K will give you 156K free. By increasing memory to 512K, you will have a whopping 412K, all usable by BASIC! The cost of memory is cheap considering the added benefits. Extra RAM memory can be used for RAM disk, print spoolers, large arrays in BASIC, etc.

Q. None of the people that have purchased the Sanyo in this area have received the *Install* program for *CalcStar*. Is there a way to install *CalcStar* to use the keypad for cursor control? The definition of *TERMCAP.SYS* appears to be in error.

Dave Kircher
Charleston, WV

A. To the best of my knowledge, none of the Sanyos shipped came with the *Install* program. I find this odd, since

MicroPro normally has an *Install* program for everything. You are right: The definition of the *TERMCAP.SYS* file seems to be in error. The layout probably is for a CP/M version of *CalcStar*. If anyone reading this article has decoded, or enabled *CalcStar* to use the keypad for cursor control, please send me a letter here at SOFT SECTOR and I will pass it on to the other readers.

Q. In setting up a random file in Sanyo BASIC, I can't get the EOF (end of file) function to work. The Sanyo BASIC reference manual (Page 7-11) states "write the *CHR\$(&H1A)* at the beginning of the record next to the final record," which is pretty meaningless to me. Can you help?

W.M. Koehler
Houston, TX

A. First of all, that quote from the Sanyo BASIC reference manual would confuse an experienced programmer. Secondly, the function EOF should only be used on a sequential file, not a random file. The random file's counterpart is the function LOF, which returns the number of bytes in the file. For example, to read a random file with a record length of 128 bytes from beginning to end, the following program segment would work.

```
10 OPEN "R",1,"TEST",128: 'Open file and test for random I/O
20 FIELD 1,128 AS A$: 'Define A$ as the data
30 FOR X=1 TO LOF/128: 'Number of 128 byte records = bytes/128
40 GET 1,X: 'Read the file 128 bytes at a time
50 NEXT X: 'Continue until all records are read in
```

If the record length is something other than 128, you would have to change the length in the *OPEN* statement and the record count calculations in Lines 10 and 30.

Q. Do you know of a program to configure the serial port to drive a printer?

John Snow
Union Lake, MI

NEW



SANYO 550 - IBM CARD !!

Run LOTUS 1-2-3, FLIGHT SIMULATOR, etc., etc., etc., etc., etc.!!!!

Special \$ 187 ORDER NOW !

Comes with new GW-BASIC and new MS-DOS 2.11 . . . Quantities Limited

***** Other CHRISTMAS Specials *****

* 64K RAM \$39 * MODEM with RS-232 & Software \$195

2 nd Disk Drives - 160/180K \$75 - 320/360K \$145 - 730/800K \$155

* All Pre-CHRISTMAS Purchases include a FREE Business-Home-&-Game PAK *

Certified Computers - 404-482-7883 I-20 East Exit 38 Atlanta, GA

A. A very simple program is included with the later versions of MS-DOS 1.25 called *P-S.COM*. This program redirects the DOS parallel printer output to the serial port. Also, Sanyo has a disk available that has some utility programs (*LINE55*, *RS232.SYS*, etc), which they will send you for the cost of the disk and handling. Sanyo has made the disk available to dealers to give to customers that request it.

Q. How do I save a program in ASCII under Sanyo BASIC. I tried *SAVE "TEST/BAS"*, A but it always gives me a "disk full" error.

Eric Fusner
Livonia, MI

A. Judging by your letter, it looks like you are a former TRS-80 user. The filename separated by a slash (/) will always return a disk space full error. The separator used under Sanyo BASIC is a period (.).

Another reason is that you might not have enough space for two copies of the program. Sanyo BASIC creates a backup of the original file and then saves the new file. After the new file is successfully saved, the backup file is deleted. If the save fails because of a disk space full error, there will be files named *filename. \$\$\$* and *filename.ext* on the disk. In order to recover the space, you must exit to DOS and delete the two files, then issue a *CHKDSK* or a *CHKDSK /F* under MS-DOS 2.11. First, however, while still in Sanyo

BASIC, type *RESET* and then try to save the file to another disk.

Q. Is there an equivalent command in Sanyo BASIC to the *BLOAD* command in IBM BASIC? I need to load a machine language routine, and the *POKE* or byte read program seems awkward.

Chuck Austin
Troy, MI

A. Yes the command *LOAD "filename.ext",B* will load a machine language program into the current *DEF SEG*. Below is an example on how a version of a sort program that I have written loads in:

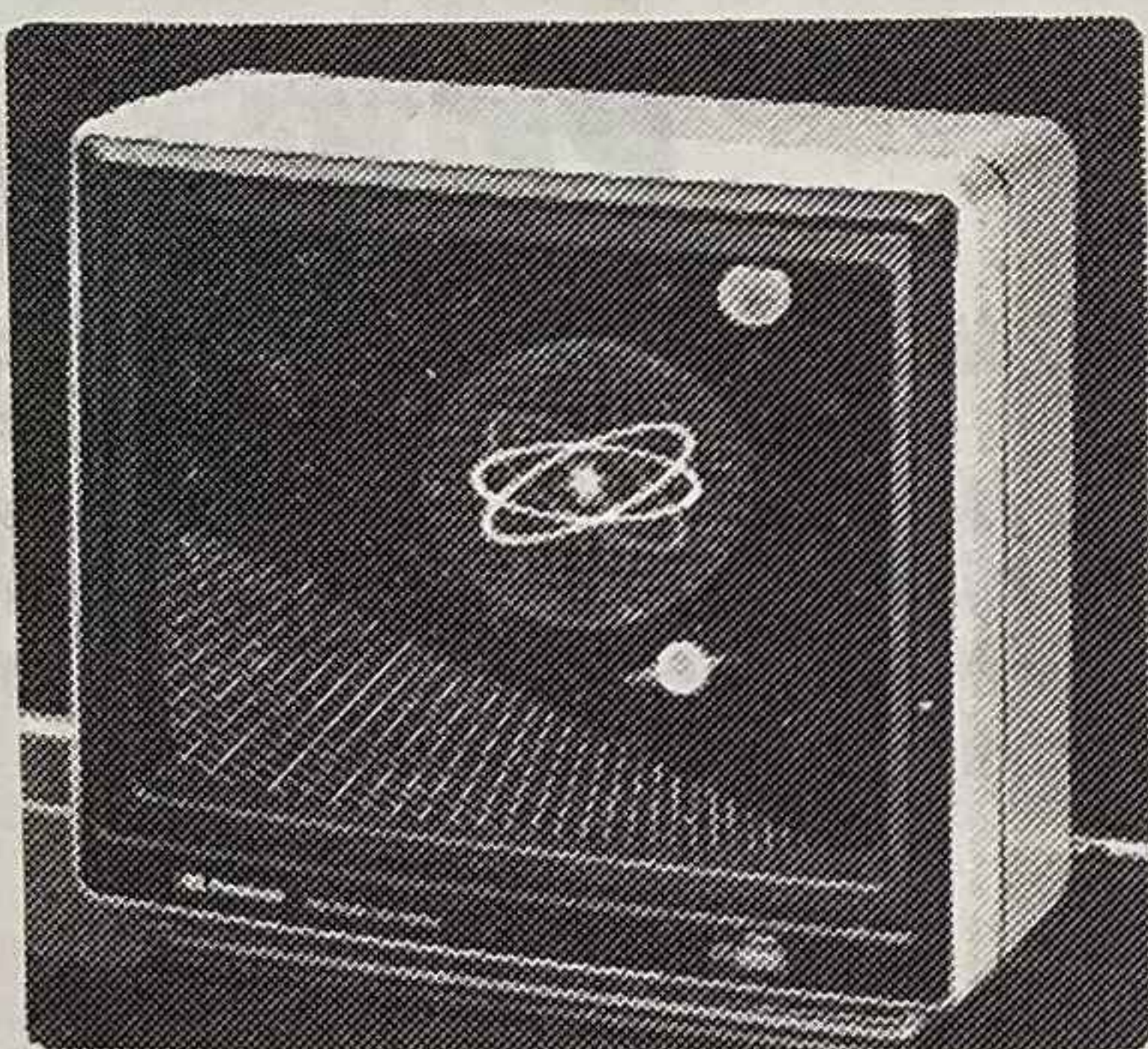
```
10 CLEAR 4: 'setup 4*16 bytes for machine language
20 DIM A$(100): 'define an array to sort
30 DEF SEG=SEG(4): 'setup segment for loading
40 LOAD "SORT.COM",B: 'load the sort program from disk
50 SORT%=256: 'point the variable "SORT" at program
60 CALL SORT%,A$(0),A$(100): 'sort array A$(0) to A$(100)
```

This method works great. The only drawback is that you need Sanyo BASIC Version 1.25 or later. In the earlier versions, this command usually reported an "out of memory" error. The latest version of Sanyo BASIC that I have seen is 1.31. This BASIC works under MS-DOS 1.25 or MS-DOS 2.11.

§

COLOR

YOUR SANYO'S CHRISTMAS



Panasonic®
CT-1300D

... "the PANASONIC CT-1300D is a good choice for anyone who needs a color display for a SANYO MBC-550 series computer."

SOFT SECTOR

- Metallic Silver Cabinet (Matches your 550)
- Full Year Warranty
- 13" Diagonal RGB Color

ONLY
\$329

Includes Shipping
Reg. \$595.00

FREE \$30.00 SANYO RGB CABLE IF YOU ORDER BEFORE XMAS 1984

BY PHONE:

CALL COLLECT
(904) 785-4226

Have VISA or Master Card Handy

BY MAIL:

SEND CHECK
or Money Order to:
COMPUTERTOWN USA
2455 HIGHWAY 77

PANAMA CITY, FL 32405
Florida Residents add 5% Sales Tax

Please purchase your SANYO from a local authorized SANYO Dealer like....

COMPUTERTOWN

USA

FREE PICASSO with purchase of 128K Memory Upgrade \$340 Value Only \$179

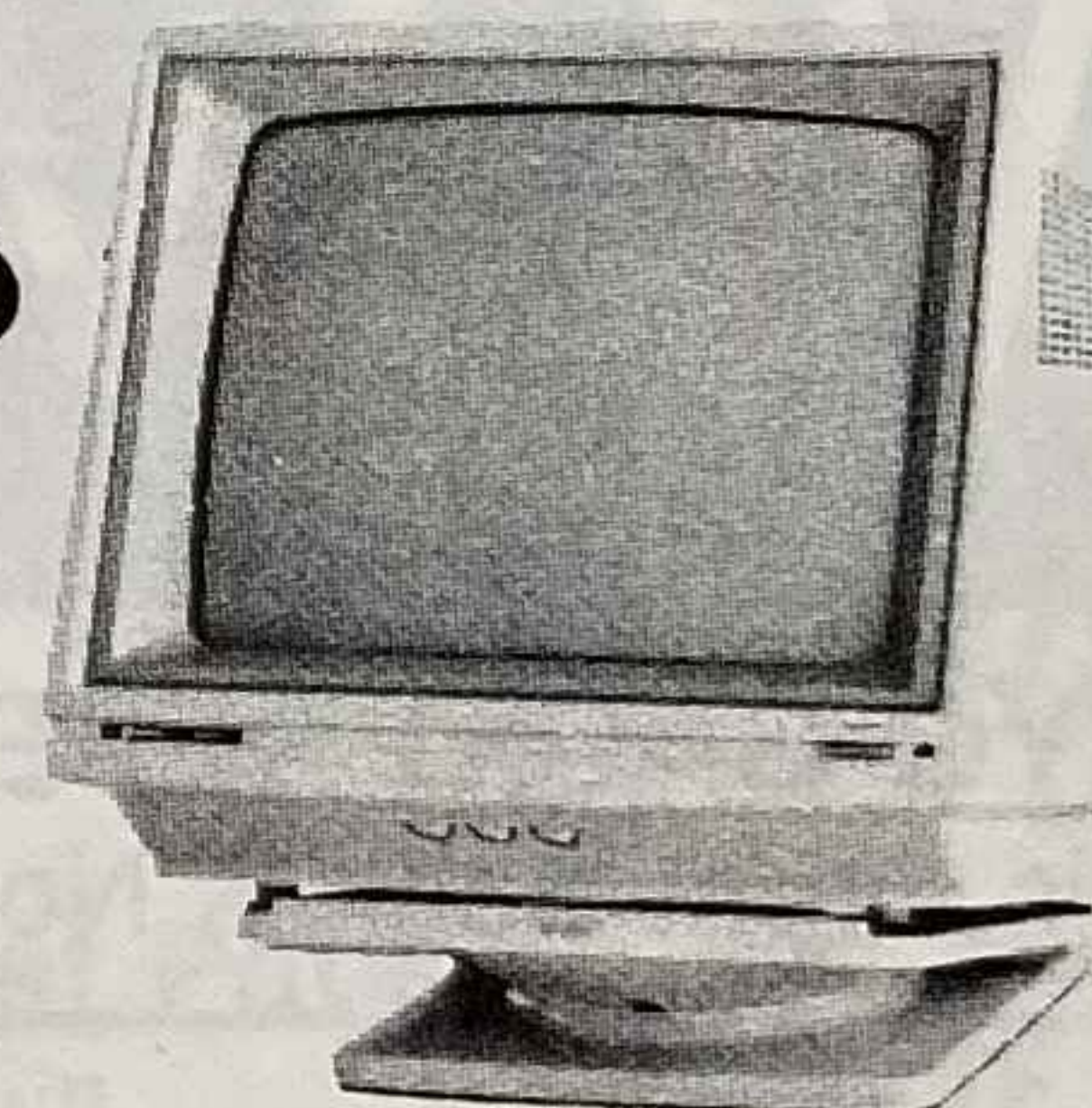
1-800-437-4757

EXT. 241

SANYO

RGB Color
monitor
w/cable

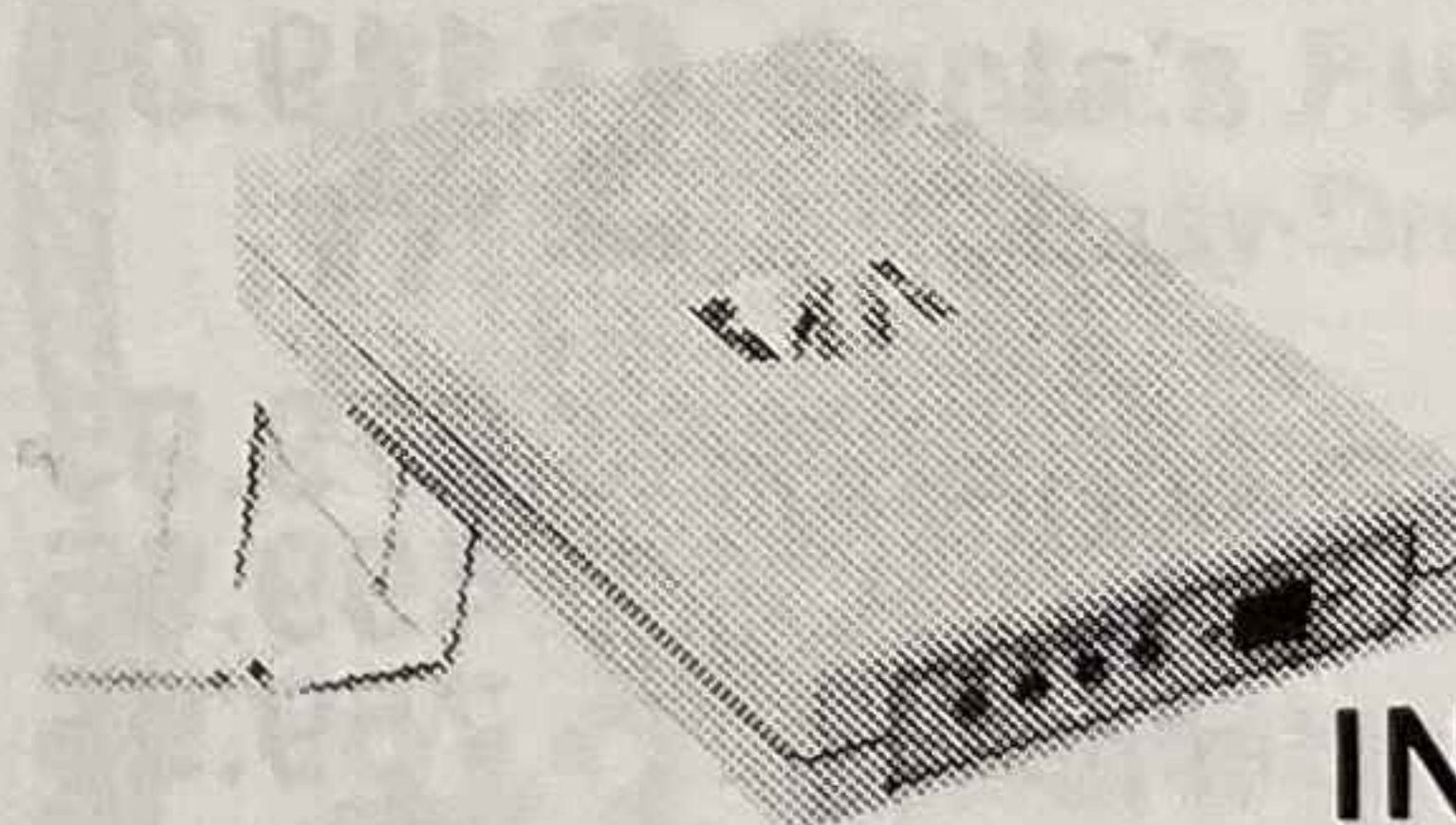
\$349.⁹⁵



SWIVEL BASE

Holds up to 13" color monitor

360° swivel
& tilt lock **\$34.⁹⁵**



**300/1200 BAUD
INTELLIGENT MODEM**

...Features Autodial and Auto Answer

...Hayes™ compatible.

\$279.⁹⁵

Cable included

RS-232 BOARD

\$74.⁹⁵

**64K Memory
Upgrade**

\$69.⁹⁵

**Computer
Associates**

Box 683
West Fargo, ND 58078

Send large SASE for complete catalog

Text Display And Formatting

By Fred Blechman *Soft Sector Contributing Editor*

If you plan on doing any programming of your own on your Sanyo 550/555, including the modification of existing BASIC programs, you have to understand how the screen is configured and how the various screen-oriented commands determine display presentation.

This article will give you details on the layout of the display for text, and the various methods of controlling the formatting of text on the screen using Sanyo BASIC commands.

Text Display

Figure 2 shows the coordinate system used to position text on the Sanyo 550/555 screen. Each of the locations shown is a "character space," with 25 lines of 80 characters per line — a total of 2,000 character spaces. Each character space uses a "matrix" (grid) of eight dots (also frequently called "pixels," for "picture elements") across and eight

dots high, for a total of 640 dots across and 200 dots vertically. Consequently, to see these characters clearly on the screen, you must have a display with a resolution of at least 640 by 200.

The Character Set

To see what the characters available in the Sanyo 550/555 look like on your display, use the BASIC program of Listing 1. Don't be concerned, at this point, with how this program does what it does.

You must, of course, be in BASIC in order to enter this program from the keyboard. Just type BASIC at the A: prompt in MS-DOS and then press the ENTER key. When you get the BASIC "Ready" prompt on the screen, type in Listing 1 and then RUN it.

Three Screens

The monitor will show the entire displayable character set of the Sanyo 550/555 in three screen presentations, five across, with the ASCII decimal

number of each character preceding the character itself.

The first screen shows the characters not available directly from the keyboard — the numbers below 32. You can only display these with the *CHR\$(number)* command. The numbers from 32 (which is a space) to 116 are punctuation, symbols, the uppercase alphabet, and up to a lowercase 't'. The display would scroll up off the screen with additional characters, so program Line 200 stops the program until you press the ENTER key. (Actually, you can press any numbered key followed by ENTER.)

The second display screen shows numbers 117 to 226. The alphabet ends with 122 and is followed by various symbols and foreign language characters. The graphics symbols run from 176 to 223.

Numbers 224 to 226 are the beginning of the special mathematical symbols available in this character set. You can see the rest of them by pressing ENTER again.

WOW! LOOK AT THIS ...

SANYO BASIC REFERENCE MANUAL

This Great Book is Now in Stock**29.95**

MONITORS

Taxan RGB Hi-Res Color**399.95**
Zenith Amber**159.95**
Zenith Green**149.95**

PRINTERS

Legend 880**279.95**
Sanyo 5500**499.95**
Brothers HR15 w/cut sheet feeder**759.95**

DUST COVERS

2 Piece Computer and Keyboard**19.95**
Most Popular Printers**19.95**

KEYBOARD CABLE EXTENDERS **14.95**

Send cashier check, money order; personal/company checks allow 3 weeks bank clearance. VISA/Master Card accepted. Provide phone number with order. Prices are for cash; VISA and Master Card add 3%. Introductory special pricing limited to stock on hand. Also C.O.D.

1-800-55-GRAPH **MIGRAPH**
SOFTWARE

(512)
657-2012
Hammer Data.

Sanyo Computable Printers

STAR MICRONICS

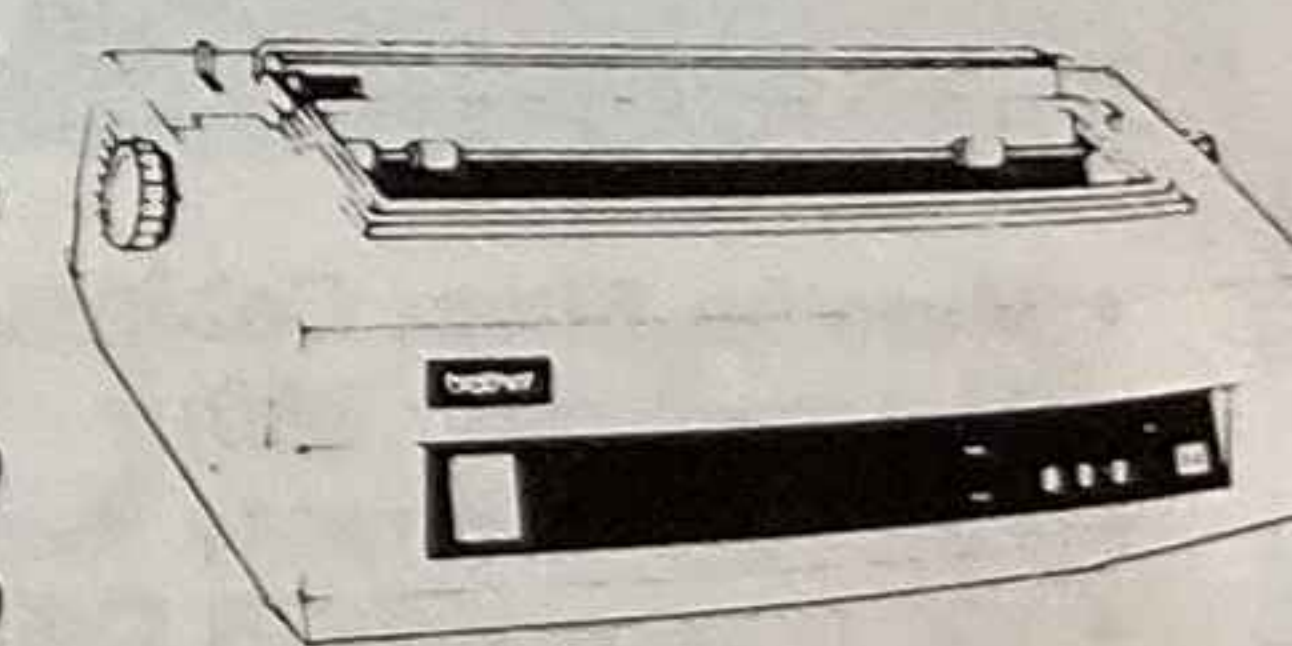
Gemini 10 x, 120 cps.**\$299**
Gemini 15 x, 120 cps, 15" car.**399**
Powertype 18 cps ltr. qual.**399**
Tractor Feed (bi-directional)**90**

OKIDATA

92P (160) cps)**\$419**
93P (160) cps)**649**

EPSON

RX80FT (120 cps, frict/tract)**\$339**
FX80 (160 cps)**459**
FX100 (160 cps, 15" car.)**679**



All Printers with FREE SANYO CABLE a \$24.95 value



DISKETTES ELEPHANT

5 1/4" SSDD**\$16.75**
5 1/4" SSDD**\$19.95**
5 1/4" DSDD**\$25.95**



Cashiers/U.P.S.
Add shipping & handling

14008 Nacogdoches
San Antonio, Texas 78247

Text Formatting

Refer back to Figure 2 again. While it is conventional in the "outside world" to refer to "lines" of text, computerists frequently use the term "row" in place of "line." I shall use the terms interchangeably in this article.

Another computerist term used to describe the horizontal location of a character on a line is "column." Line or row is the vertical position (top to bottom), while column is the horizontal position (left to right).

It is very important that you get these straight, since the computer always requires commands in a specific order. Text commands use a "row/column" location format. Graphics commands, not covered in this article, use a "column/row" positioning format.

The *PRINT* Command

There are several commands available in Sanyo BASIC to locate and display text on the screen. The most common by far is the *PRINT* command. By simply following the word *PRINT* with quotation marks and a "string" of characters, the screen will display those

characters when you press the ENTER key.

Instead of typing in the individual letters, there are three "shortcuts" to getting the word *PRINT* in a BASIC program. You can use the question mark (?) symbol, and this means *PRINT* to the BASIC interpreter (unless it is used within a *PRINT* statement in quotation marks). You can use the PF3 key. Another way to get *PRINT* is to hold down the CTRL key and press the 'P' key.

Since examples seem to be the easiest way for most people to learn, get your Sanyo up and running, get into BASIC, and when the Ready prompt appears on the screen, type this:

```
CLS:PRINT"This is Line Number 1."
```

When you press ENTER, your screen will clear (that's what *CLS* is for) and then will display, at the upper-left corner of the screen, exactly whatever you typed between the quotes. Notice that the printing starts on Line 1, Column 1 of the screen. You may wonder about the colon right after *CLS*. Sanyo BASIC allows you to put more than one instruction on a program line, provided you

separate the statements with a colon.

There is a restriction here, however. You can't use quote marks within the quotes. There are ways around this, but for now, the easiest way is to use a relatively rare command, *WRITE*. Use it this way, directly from the keyboard:

```
CLS:PRINT"This is";WRITE"Line Number 1."
```

Now when you press ENTER, you'll see that "Line Number 1." is printed with quotes on the screen. You may have noticed another thing — the semicolon in the center of the line, right after the *PRINT* closed quotation. The semicolon is extremely important in screen formatting and is frequently used. Normally, if a "delimiter" such as a semicolon is not used when a *PRINT* or *WRITE* command is processed, the cursor moves to the next line, much as the "carriage return" on a typewriter. The semicolon inhibits the movement of the cursor (and the next *PRINTing* or *WRITEing*) to the next line. Instead, the cursor just sits and waits to start *PRINTing* at the next character location.

Filling The Screen

Listing 2 will fill your screen with 25

DEALERS ONLY!

IBM PC™ Compatible **SANYO**
Business Computer System

STANDARD FEATURES:

- MS DOS
- 16 Bit 8088 CPU
- SANYO BASIC
- 128K Internal Memory
- Centronics Printer Port
- Color Graphic Capabilities
- Diagnostics, Utilities, Speaker & Joystick Port



CALL FOR PRICING!

MBC 550

- 1 single sided/double density disk drive (160K)
- WordStar & CalcStar Included

RETAIL-\$999.00

MBC 555

- 2 single sided/double density disk drives (320K)
- 128K memory expandable to 256K
- WordStar, CalcStar, DataStar, InfoStar, & MailMerge Included

Also available in double sided drives

MEC
MICRO-EQUIP-CORP

MICRO EQUIPMENT CORPORATION

6180 Atlantic Blvd.
Suite H

Norcross, Ga. 30071

404/843-3128

Gifts Galore!

Here's Our Gift to You!

#1 Santa's Artist Pack
Easy-Draw™ + Easy-Print™ \$74.95

SAVE \$15

#2 Santa's Fun Pack
Easy-Draw™ + Picture Puzzle™ \$79.95

SAVE \$20

#3 Santa's Super Sampler
Easy-Draw™ + Picture Puzzle™ + Easy-Print™ \$99.95

SAVE \$30

Send cashier check, money order, personal company checks allow 3 weeks bank clearance. VISA Master Card accepted. Provide phone number with order. Prices are for cash. VISA and Master Card add 3%. Introductory special pricing limited to stock on hand. Also C.O.D.

1-800-55-GRAPH

MIGRAPH
SOFTWARE

SEE OUR OTHER ADS FOR PRODUCT DESCRIPTION

lines that have 80 characters on each line. Type *NEW* at the keyboard and press *ENTER* to clear the computer memory of the existing program, then type and *ENTER* Listing 2.

This is a good way for you to "align" your monitor, since you might be losing some characters from the top, bottom or sides of the screen. Most monitors have external controls or access holes to adjust height, width, position, focus and linearity. Adjust those that are available for the best display while this program is running. To stop the program and regain control of the computer, press the *BREAK* key, since program Line 40 puts the computer in an "endless loop."

Printing Zones

Another commonly used delimiter is the comma. Used after a *PRINT* (not *WRITE*) statement, the comma tells the computer to place the next *PRINTing* at the next "zone" on the screen. The screen is divided into five zones across (see Figure 2), each zone containing 16 characters. Clear the existing program with *NEW* and *ENTER*, then type in the following simple program to illustrate how the comma functions in screen formatting:

```
10 CLS
20 FOR X=1 TO 40
```

```
30 PRINT "Testing",
40 NEXT X
```

When you *RUN* this program, you'll get five columns and eight rows of the word "Testing" (without quotes), as shown in Figure 3. The comma at the end of program Line 20 advances the *PRINTing* to the next zone each time.

You can easily tabulate numbers in five columns this way (although they will not be "right justified.") Change Line 30 of the program above to read:

```
30 PRINT X,
```

Don't forget the comma at the end of the line. Now when you *RUN* the program, you'll see five columns of numbers with the first digits nicely lined up, as shown in Figure 4. The computer has been told, by program Line 30, to *PRINT* the current value of variable *X* each time through the *FOR/NEXT* loop.

What is not obvious here, however, is that there is a blank space ahead of each number for a minus sign, if necessary. Sanyo BASIC provides this automatically, and it can be puzzling if you are not aware of it. For example, make these changes in the program above:

```
Change Line 20 to:
20 FOR X=-20 TO 19
```

Add Line 25:
25 PRINT "Number";

Don't forget the semicolon at the end of Line 25. When you *RUN* the program, you'll get the results shown in Figure 5. The spaces ahead of the negative numbers use the minus sign, but the positive numbers simply have a blank space. You must take this into consideration when formatting numbers. As a matter of fact, although you can't see it here, there is a blank space after each number as well as before.

Using *INPUT* and *TINPUT*

Printing text on the screen, when user response is required, is done with the *INPUT* statement. This will stop the computer until a response is entered from the keyboard. Line 200 of Listing 1 shows an example of *INPUT* used to stop the screen display until the user presses *ENTER* to continue. *INPUT* is normally used when a value or statement is required from the user. This simple program is an example:

```
10 INPUT "What is your first name";
A$
20 INPUT "What is your present
age";A$
30 PRINT:PRINT A$; ", you will
be";A+1;"on your next birthday!"
```

```
*****
*
*          SYSTEMS DISTRIBUTING
*          223 WEST TENTH STREET
*          GREENVILLE, NC 27834
*          919-752-8072
*
* SOFTWARE FOR SANYO MBC 555 & IBM COMPATIBLES
*
* EATEM __ Are you Hungry for action? This game is
*          nutritious to your health. Arcade excitement.
*
* PS _____ Use your dot matrix printer more effectively
*          with this printing program for accessing
*          various printing features.
*
*          PRICE: $19.95 or both for $35.95
*
* FUN DISK ___ Assorted programs. $10.00
*
*          N.C. RESIDENTS ADD SALES TAX OF 4.5%
*          PLEASE ADD $1.50 SHIPPING & HANDLING
*
* " When ordering specify DOS Version"
* " Send copy of printer control codes for PS program, since
*   we customize it to your printer."
*
*****
```

PRICE WAR!
TEAC 55B DRIVES
\$119
IBM - SANYO COMPATIBLE
QUANTITY DISCOUNT AVAILABLE
PACIFIC DISTRIBUTORS
(818) 790 - 4304



CHICAGOLAND



SANYO



SALES ◇ SERVICE ◇ ACCESSORIES ◇ SOFTWARE
CALL OR WRITE FOR OUR FREE CATALOG

HOME OFFICE
Electronic Business Systems

653 ROGER WILLIAMS ◇ HIGHLAND PARK IL. 60035
All items in stock! Orders shipped within 24 hours!

312/432-8070

MS-DOS DISK CATALOG SYSTEM (DCS)

Menu driven Turbo PASCAL System written for any MS-DOS (Ver 1 or 2) Personal Computer. DCS provides the capability to read any formatted disk and store the directory in a database. You can add/replace or delete disk volumes in the database. An option exists when adding/replacing or from the print menu to print a 4 x 1 1/2 inch label listing the directory of a specific disk in alphabetical order. Inquiry and print capabilities are provided for selective listings in alphabetical sequence by file name or file name within volume name, as well as a disk summary listing. Included are installation programs to initialize DCS for your brand of computer, a database reorganization program and a printer customization program to set the appropriate control characters to print the labels on your brand of printer. System limits are 40 directories per diskette, 150 files per diskette and 500 diskettes. System requirements are 128K memory and one (1) disk drive.

INTRODUCTORY PRICE is \$39.95 + \$3.00 S/H (FL residents add 5% tax)
PALM BAY SOFTWARE • P.O. Box 61625 • Palm Bay, FL 32906

When you *RUN* this, you'll see that the computer automatically adds a question mark with an *INPUT* statement. The *AS* in Line 10 is called a "string" — you merely type in your name and press ENTER. After you type and ENTER your age, the computer adds one to your present age and *PRINTS* your name and the age on your next birthday.

The *TINPUT* statement is more sophisticated. Suppose you wish, for some reason, to have the *INPUT* cursor move the characters right to left as you type in your response. Change Line 10 to:

```
10 PRINT "What is your first
name? ";TINPUT AS
```

First you program with *PRINT*, then advance the cursor with blank spaces, then use *TINPUT*. Notice that the ques-

tion mark is not added automatically. Now, when you *RUN* the program and type in your response, the cursor will remain stationary and your characters will move to the left. This is not generally used, but is mentioned here as another formatting option.

TABbing Your Line

While the comma allows you to *PRINT* in zones 16 characters wide, you certainly want more flexibility than that in spacing items on a line. That's where the *TAB* statement comes in. Type *NEW* and ENTER, then type in this program to illustrate how *TAB* can be used:

```
10 CLS
20 FOR X=1 TO 58 STEP 3
30 PRINT TAB(X)"TABbing PRINT
location"
40 NEXT X
```

The *RUN* is shown in Figure 1 at the

end of this article. Each of the lines of printing is displaced three places to the right as Line 20 of the program changes the value of *X* by three each time through the *FOR/TO/STEP* loop incremented by the *NEXT X* in Line 40. You can't go "backward" with *TAB* statements on the same line, but you can reduce the *TAB* value on subsequent lines. For example, change program Line 20 to this:

```
20 FOR X=58 TO 1 STEP -3
```

Now *RUN* and you'll see the printing start at the right side of the screen and progress three spaces to the left on each line, just the opposite of that shown in Figure 1.

Editor's Note: This article is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing.

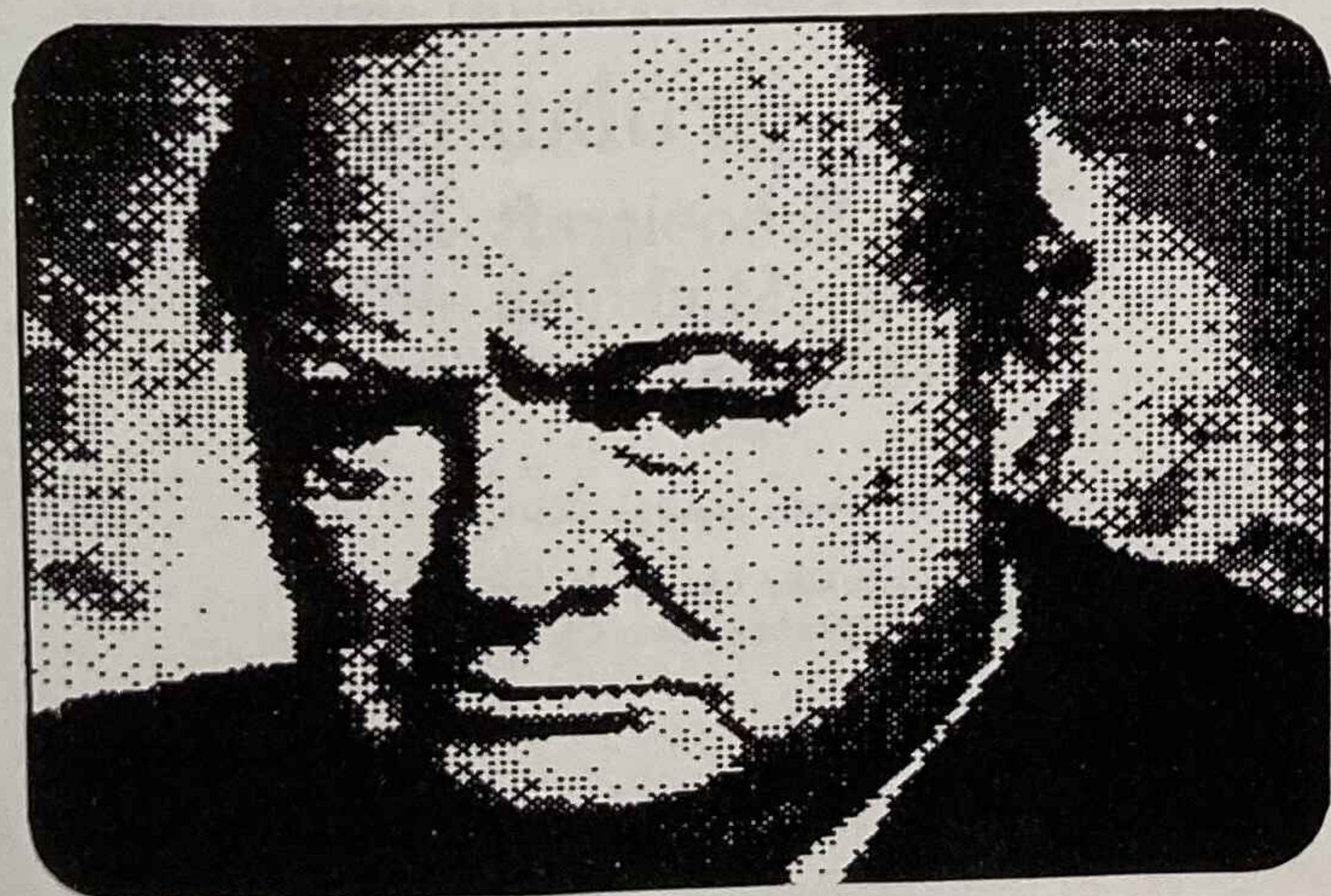
Copyright© 1984 by Fred Blechman.

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners.)

Listing 1: The character set.

```
10 REM * Displaying Sanyo 55X Character Set *
20 REM * (C) Copyright Fred Blechman 1984 *
30 CLS:CHAR=1:FOR R=1 TO 7
40 READ C
50 DATA 1,2,3,4,5,6,11
60 PRINT C;" ";CHR$(C),
65 CHAR=CHAR+1
70 NEXT R
100 FOR C=14 TO 254
110 PRINT C;" ";CHR$(C),
120 CHAR=CHAR+1:IF CHAR=111 THEN GOTO 200
```

Picture Purrrfect



**A BREAKTHROUGH IN
HIGH RESOLUTION GRAPHICS**
WEAVER STREET SOFTWARE

101 Center St. • Carrboro, NC 27510 • (919) 929-7790

Software submissions welcome; call for information.

GAMEMASTER 1 — Great games for the Sanyo running MS-DOS 1.25 with either color or monochrome monitors. Challenging games like Othello, Blackjack, and Slot Machine are great fun for everyone. You also get HANGMAN, a user-listable high-res game where you can supply your own words—excellent for kids learning to read!\$29.95

PICTURE PURRFECT — A screen dump configured for 128K, 192K, and 256K Sanyo MBC-550 Series. You can use it as a subroutine in BASIC or to "photograph" many game screens. Installable for any dot-addressable printer including Oki 92, Epson, and Gemini 10/15X printers. Order now and get 10 high-res pictures free!\$39.95

GRAFPAC — An on-screen graphics program allowing you to construct doodles, graphs, charts, and artwork. Images can be sent to disk or to your dot-addressable printer.\$39.95

BASIC LOCKPIC — Program protected by accident? Get your listing back using this handy program to unprotect the SAVE "name", q command.\$39.95

Please include \$2.50 for shipping in U.S., \$4.50 outside U.S.
N.C. residents add 4 1/2% sales tax.


```

130 NEXT C
140 END
200 PRINT:INPUT"Press down-left ENTER key to continue.....";A
210 CHAR=1:GOTO 130

```

Listing 2: Filling the screen.

```

10 FOR X=1 TO 25
20 PRINT"1234567890123456789012345678901234567890123456789012345678901
234567890";
30 NEXT
40 GOTO 40

```

Figure 1: PRINT TABbing.

```

TABbing PRINT location
  TABbing PRINT location
    TABbing PRINT location
      TABbing PRINT location
        TABbing PRINT location
          TABbing PRINT location
            TABbing PRINT location
              TABbing PRINT location
                TABbing PRINT location
                  TABbing PRINT location
                    TABbing PRINT location
                      TABbing PRINT location
                        TABbing PRINT location
                          TABbing PRINT location
                            TABbing PRINT location
                              TABbing PRINT location
                                TABbing PRINT location
                                  TABbing PRINT location
                                    TABbing PRINT location
                                      TABbing PRINT location
                                        TABbing PRINT location
                                          TABbing PRINT location
                                            TABbing PRINT location
                                              TABbing PRINT location
                                                TABbing PRINT location
                                                  TABbing PRINT location
                                                    TABbing PRINT location
                                                      TABbing PRINT location
                                                        TABbing PRINT location

```

OUR MOST POPULAR SANYO™ ACCESSORIES AND SOFTWARE

Hard drives (6 to 36 meg)	\$1295 to \$2995
Floppy disk drives	160k-\$140/360k-\$190
RS232 Communications interface	\$70
Professional grade joysticks	\$59.95
(4) Disk drive interface cable	\$39.95
Parallel printer cables	\$29
Computer A/C powerline filters	\$39/\$40/\$50
Printer switch (2-printers on 1-computer)	\$70
Keyboard extender cable 6-ft long	\$12.95
Panasonic 13" hi-res color monitor RGB/composite	\$379
TV tuner VHF/UHF for composite monitors	\$119.95
Color RGB monitor interface cable	\$24.95
192k Ram expansion kit (150ns prime quality)	\$79.95
256k Ram expansion kit (150ns prime quality)	\$149.95
Disk drive head cleaner kit	\$17.95
Printers, large selection best prices	\$call
Term 123, smart terminal software package By:Tim Purves	\$79.95
Ram Spooler, free your computer while printing By:Tim Purves	\$39.95
Screen dump to printer (text only) By:Tim Purves	\$19.95
Screen dump to printer (text and graphics) By:Tim Purves	\$39.95
Ramdisk, in memory phantom disk drive By:Tim Purves	\$39.95
Grafik, graphics editor and program generator	\$99.95
Keyword, redefine 30 macro keys in basic	\$9.95
PFkey, redefine 10 function keys	\$9.95
Transfer, TRS-80/Sanyo/TRS-80	\$39.95
Other Games and utilities	\$call

Authorized SANYO™ sales and service center

Level IV Products, Inc.

28194 Schoolcraft Road
Livonia, Michigan 48150
(313) 525-6200

Dealer inquiries invited

Visa/Master Charge/Check/C.O.D.
shipping/handling/insurance 2% or \$3 minimum

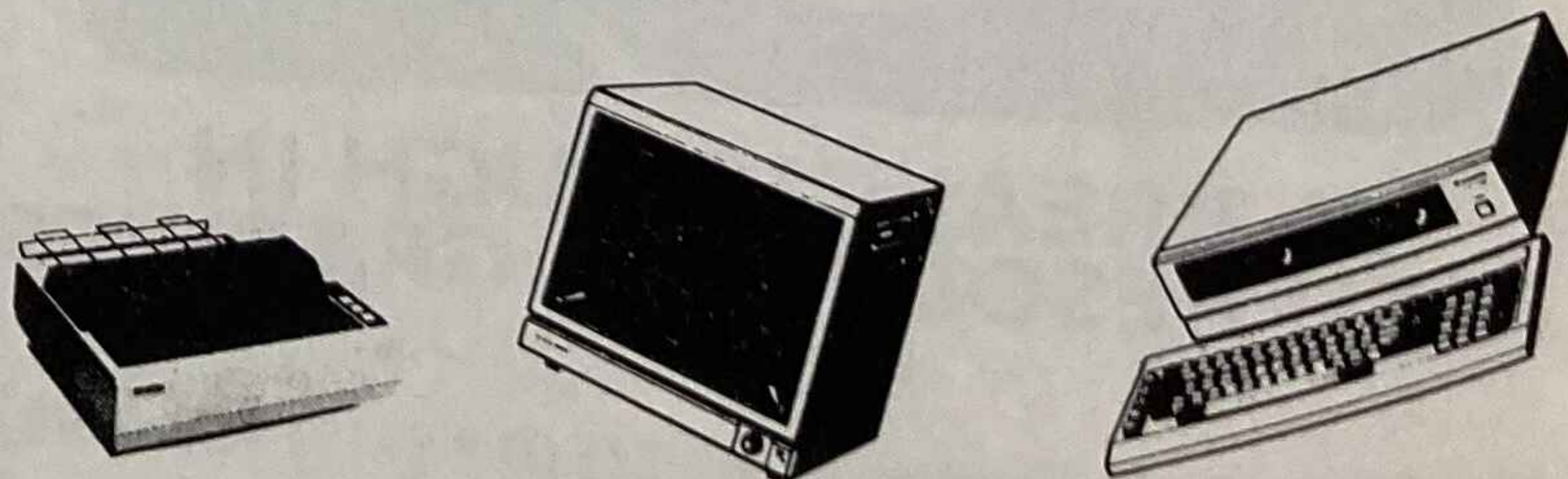


Figure 2: Text coordinate system.

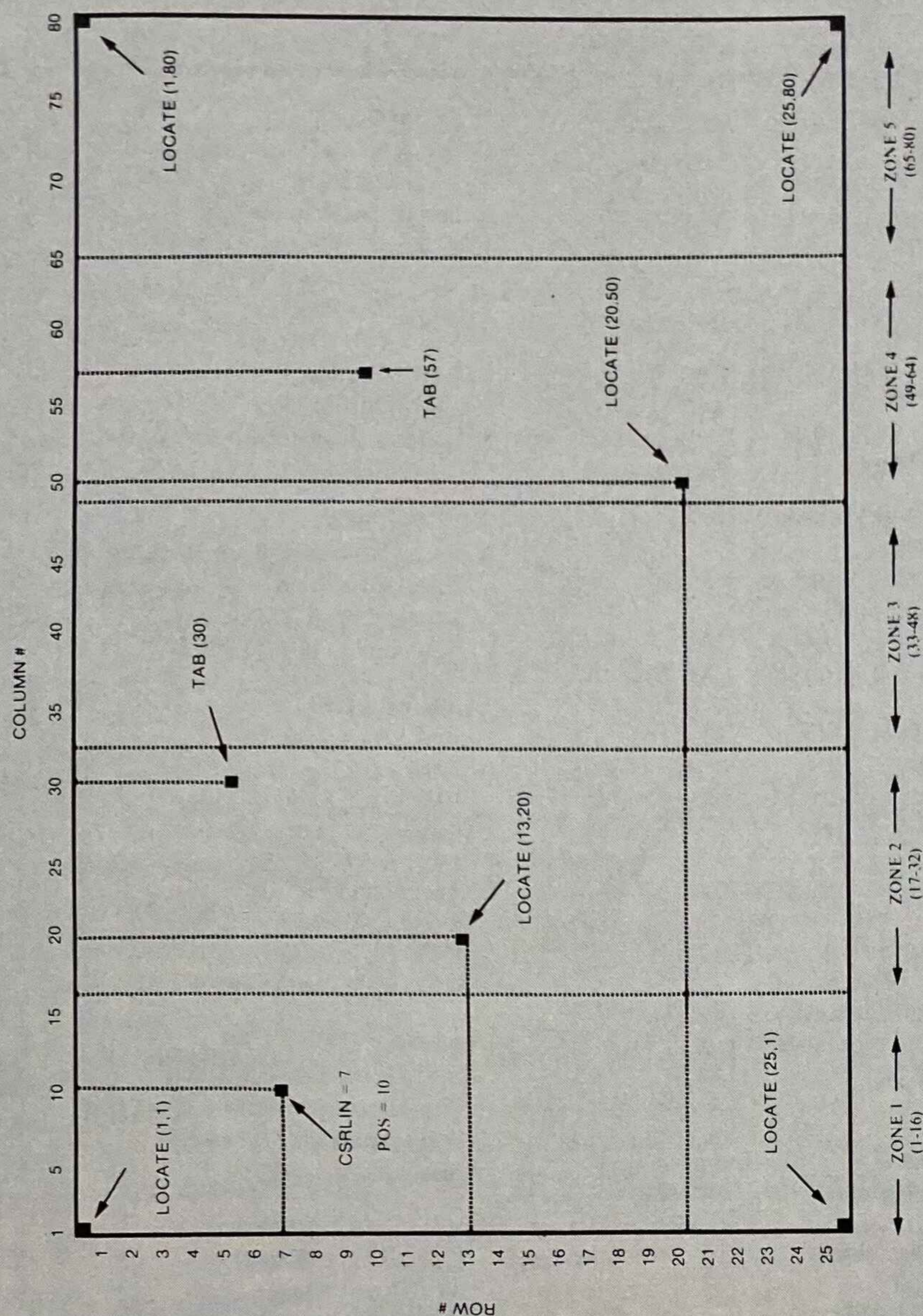


Figure 3: Printing zones.

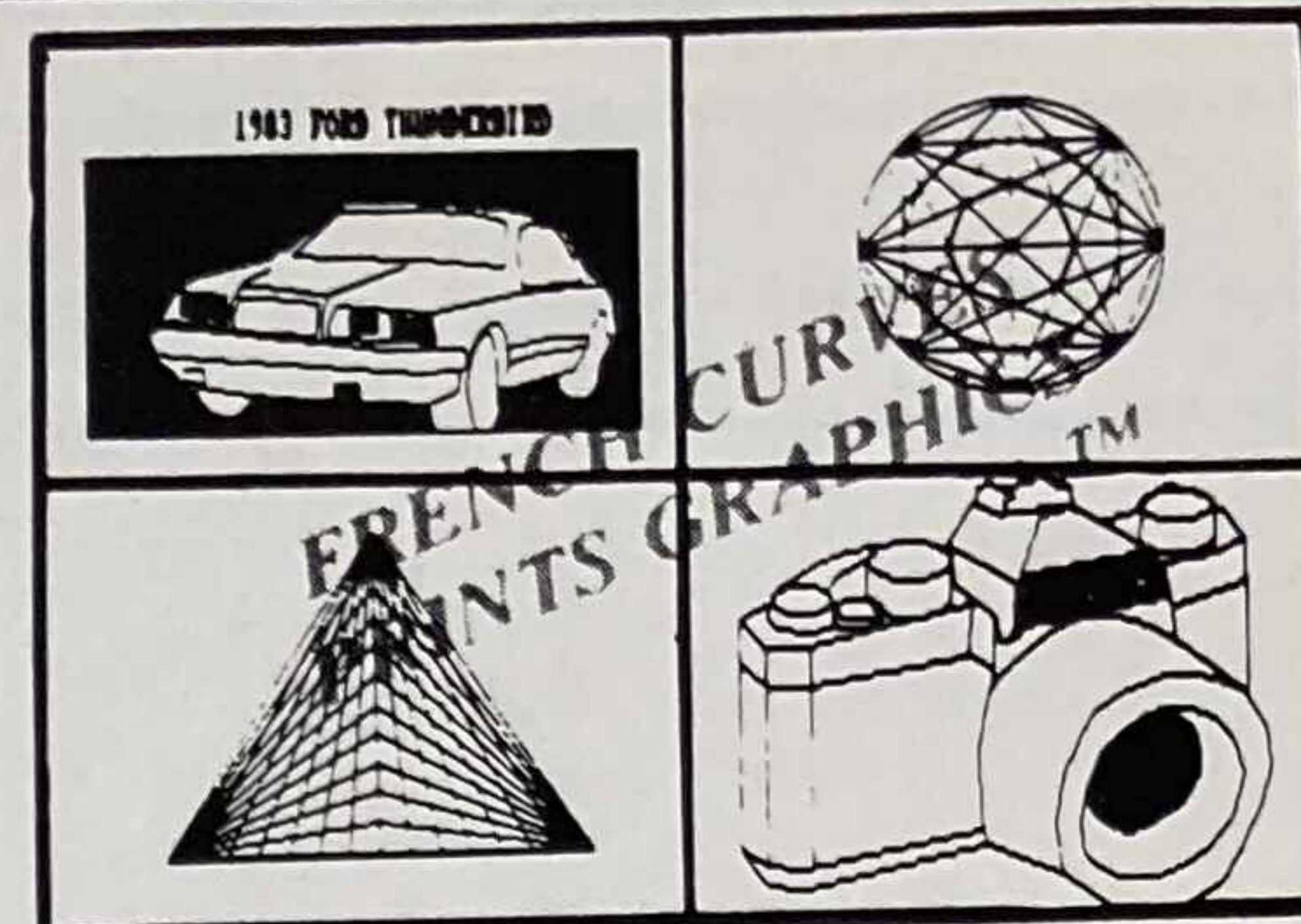
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing
Testing	Testing	Testing	Testing	Testing

Figure 4: Formatting numbers.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40

Figure 5: Each number has a "sign" space.

Number-20	Number-19	Number-18	Number-17	Number-16
Number-15	Number-14	Number-13	Number-12	Number-11
Number-10	Number-9	Number-8	Number-7	Number-6
Number-5	Number-4	Number-3	Number-2	Number-1
Number 0	Number 1	Number 2	Number 3	Number 4
Number 5	Number 6	Number 7	Number 8	Number 9
Number 10	Number 11	Number 12	Number 13	Number 14
Number 15	Number 16	Number 17	Number 18	Number 19



FRENCH CURVES is a slick product! Extremely easy to use ...

Arthur Shebar
National Sales Manager
Sanyo Business Systems

FRENCH CURVES is a versatile program with which even I can produce high quality graphics, charts, blueprints or other graphics as desired.

Bob MacDonald
Soft Sector Magazine

FRENCH CURVES is one of the best, most exciting Sanyo graphics programs I've seen yet. Moreover, **FRENCH CURVES'** screen dump to the printer is tops ...

Bill Lathrop
Computer Trader Magazine

FRENCH CURVES works as advertised!
Richard Goehl
Computer Consultant
Creative Computers

FRENCH CURVES is a graphics program to allow you to draw on the Sanyo. Anything the hand can draw, **FRENCH CURVES** can duplicate and more! You can enlarge or reduce your graphics creations, save or load to disk, combine graphics and dump to most dot matrix printers. Create graphics with **FRENCH CURVES** and incorporate in your own programs. **FRENCH CURVES** comes with a 30 page illustrated users manual.

By Yvon Bourque \$75.00

MATMAN™ - Matrix Manager - Setup any of the print features available for your Epson, Panasonic, Gemini or Delta printer right from MSDOS before you enter your programs. Expanded, Compressed, Emphasized, Pica, Elite are just a few of the commands available from **MATMAN**, the menu driven, command file.

Only! \$29.95

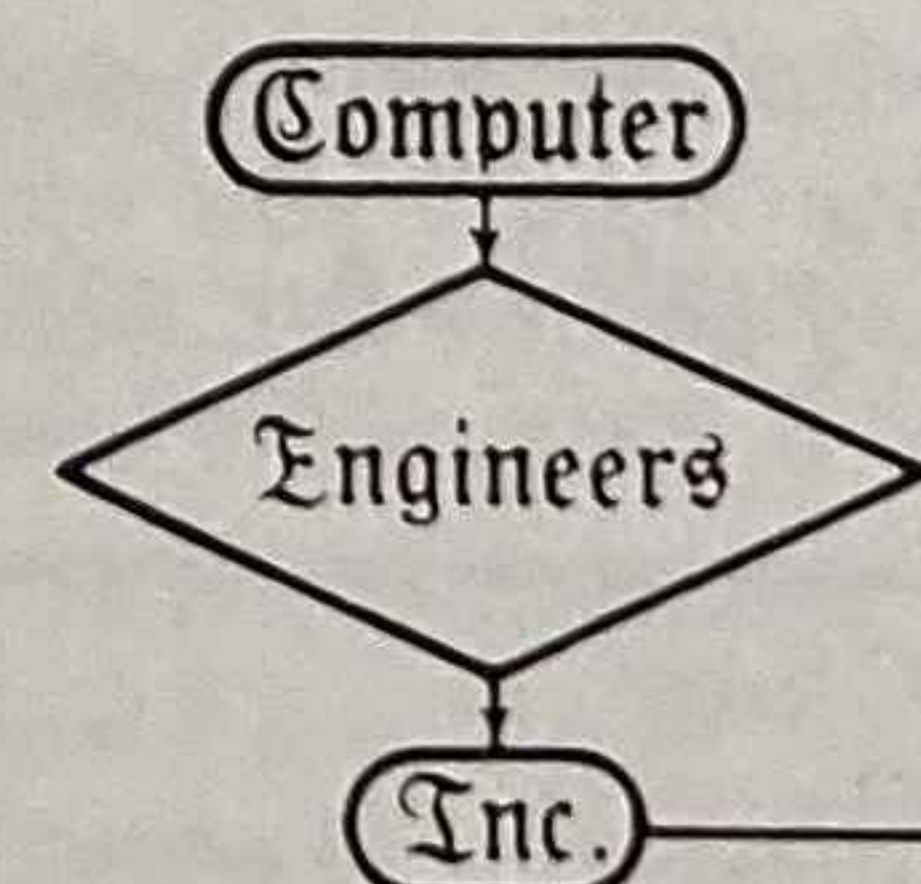
CHECK TRACKER™ - The ultimate high speed, machine language, checking account manager which should win an award for its flexibility, data retrieval and ease of data entry/edit. Reconciles bank statement, provides unlimited group codes with multiple retrieval search.

Only! \$39.95

NUMBER FUN™ - Learn ADD/SUB/MUL/DIV the fun way for grades K thru 9. Provides happy face for lower grades with large full screen numbers and selective difficulty levels.

By Yvon Bourque. Only! \$29.95
PROGRAMMERS: Computer Engineers is always looking for Top Quality Sanyo and Generic MSDOS software to publish. For consideration, send copy of program and documentation to Computer Engineers, Inc., Attention: John Shackleton.

★ Dealer Inquiries Invited ★



Computer Engineers

1000 Pike Road
Birmingham, AL 35218

1-800-228-2321

or
(205) 781-0711
Call or Write Today



CLUBS CLUBS CLUBS

ALABAMA

Sanyo Users Network
Robert Buster
P.O. Box 4053
Birmingham, AL 35206
(205) 838-2506

CALIFORNIA

Sanyo Users Group of Southern California
Sandy Sigal CFR Group
4441 Sepulveda Drive
Culver City, CA 90230
(213) 390-8591

Sanyo PC Hackers (International)
Cal Lindell
12155 Edgecliff Pl.
Los Altos Hills, CA 94022
(415) 941-2796

Sanyo 550/555 Users Club
John Tee
P.O. Box 38565
Los Angeles, CA 90038
(213) 851-4444

Sanyo Users Group LA
Don Barcus
12609 Woodgreen St.
Los Angeles, CA 90066
(213) 390-6962

Sacramento Sanyo Users Group
Randy Jones
P.O. Box 660216
Sacramento, CA 95866-0216
(916) 362-8305

Sanyo SIG of San Diego
John Will
P.O. Box 90195
San Diego, CA 92109
(619) 268-7773

We are compiling a list of Sanyo Users Groups in order that you can find those closest to you and also that they may exchange newsletters, share ideas for topics of discussion at monthly meetings, etc.

Please let us know if we have omitted any clubs and send us complete up-to-date addresses. Also, please notify us if you wish to add or delete any names on this list. Send your information to:

Clubs, Clubs, Clubs
SOFT SECTOR
9529 U.S. Highway 42
P.O. Box 385
Prospect, KY 40059

BASUG (Bay Area Sanyo Users Group)
Scott Burry
5840 Geary Blvd. #100
San Francisco, CA 94121
(415) 928-2051

Sanyo PC Users Group
Allan Senkow
22578 Honnold Dr.
Saugus, CA 91350

COLORADO

Denver Area Sanyo Users Group
Jerry W. Smith
9997 West 85th Avenue
Arvada, CO 80005
(303) 424-7499
modem (303) 431-0051

D.C.I. Computer Club
Ed Allburn
Buckingham Square Shopping Center
1377 B South Joliet
Aurora, CO 80012
(303) 337-7108

Sanyo Computer Club
Norman R. Martell
6651 Metropolitan St.
Colorado Springs, CO 80911
(303) 392-9826

CONNECTICUT

New England Sanyo Users' Network
Sid Shore
Sharon Valley Road
P.O. Box 603
Sharon, CT 06069

FLORIDA

Brevard User's Group/MS-DOS SIG
John Oborn
P.O. Box 1402
Palm Bay, FL 32906-1402

Sanyo Computer Club
Peyton Yon
5610 4th St. North
St. Petersburg, FL 33703
(813) 526-6304

Bay Area Sanyo Enthusiast (B.A.S.E.)
Lee Swearingen
P.O. Box 260517
Tampa, FL 33685
(813) 866-7751

GEORGIA

CSRA Sanyo Users
Amos Patterson
P.O. Box 5776
Augusta, GA 30906

HAWAII

Hawaii Sanyo Users Group
Jerry Sobocienski
94-450 Kiilani St.
Mililani, HI 96789

IDAHO

Boise Sanyo Users Group
Jim Puett
1855 Waltman Street
Meridian, ID 83642
(208) 888-4873

ILLINOIS

Great River Microcomputer Users Group
(GRMUG)
David N. Wexler
47 Lake Drive S., RR #9
Quincy, IL 62301
(217) 222-2343
or
Lon Moeller
1226 Daniel Ct.
Quincy, IL 62301
(217) 223-5891

KENTUCKY

Kentucky Area Sanyo Society
Mike Charlton
Route 1 Box 859
Lewisport, KY 42351

MARYLAND

Sanyo Users Group
Atul Jai
12613 Brunswick Lane
Bowie, MD 20715

Sanyo Users Group
Roger Moos
P.O. Box 1825
Rockville, MD 20850

MASSACHUSETTS

Sanyo Users Group/USA
Jim Hornig-Rohan
P.O. Box 8069
Boston, MA 02114

Sanyo New England
Donald H. Wetzel
99 School Street
Weston, MA 02193
(617) 891-1238

MICHIGAN

Michigan Sanyo Users (M.S.U.)
Lawrence Macionski
P.O. Box 71651
Madison Heights, MI 48071

S.U.G.G.E.S.T. Sanyo
(Special Users Group Gathering Enjoying Sanyo Technology)
Ralph Landry
Michigan Software
43345 Grand River
Novi, MI 48050
(313) 348-4477

NEBRASKA

SLUGO (Sanyo Local Users)
Herb Hickman
2521 S. 132nd St.
Omaha, NE 68144
voice: (402) 330-0920
modem: (402) 453-0914

NEW YORK

North American Sanyo 555 Users Group
Howard P. Alvir, Ph.D.
27 Norwood Street
Albany, NY 12203

Long Island Computer Association/Sanyo Users Group
Herbert Jaffe
57 Elinor Place
Freeport, NY 11520
(516) 868-7461

Upstate Sanyo Users Group (UPSUG)

Gary D. Murphy
2988 Cuylerville Rd.
Leicester, NY 14481
(716) 382-3467

Poughkeepsie S.U.G.

Eugene Warfel
Oakwood School
Poughkeepsie, NY 12601
(914) 462-7434

Sanyo Users Group/N.Y., N.J., L.I.

Patrick Yanez
P.O. Box 182
Times Station Plaza, NY 11217
voice: (212) 855-9029
modem: (718) 596-5802

NORTH CAROLINA**J.A.C.P.O.T (Jacksonville Area Computer Programmers and Organized Telecommunications)**

Keith F. Simon
Route 3 Box 394N
Jacksonville, NC 28540
(919) 347-6110

Sanyo CP/M-MS/DOS Group

John L. Johnson
707 Edge Hill Road
New Bern, N.C. 28560
(919) 638-6976

OHIO**Sanyo Users Of Central Ohio**

5760 Crawford Drive
Columbus, OH 43229
(619) 846-3330

Dayton Area Sanyo Users Group

Mel Lammers
4201 Rushmore
Dayton, OH 45430
(513) 426-7169

Sanyo Users Group/Toledo Area

Daniel J. Kuna, Ph.D.
820 Security Bldg.
243 North Huron
Toledo, Ohio 43604
(419) 244-4423

Youngstown Users Group

George Beelen
817 Washington St.
Youngstown, OH 44520
(216) 545-0824

TEXAS**Amarillo Area Sanyo Users Group**

Les Sparks
Box 2052, W.T. Station
Canyon, TX 79016
(806) 622-0547

Houston Hackers

Frank Havel, P.E.
20203 Kempsford Ct.
Katy, TX 77450
(713) 492-7369

North Texas Sanyo Users Group

Jerry R. Barnes
637 Pinehurst Dr.
Richardson, TX 75080
(214) 783-9147

VIRGINIA**Washington Area Computer Users Group**

Edward Cavert
4032 Hadley Lane
Fairfax, VA 22032

Tidewater Virginia Sanyo Users Group

Tom Hardees
4137 Virginia Beach Rd.
Virginia Beach, VA 23452
(804) 463-2028

WASHINGTON**Sanyo Lover's Users Group (S.L.U.G.)**

Michael Russell
P.O. Box 2084 CS
Pullman, WA 99163

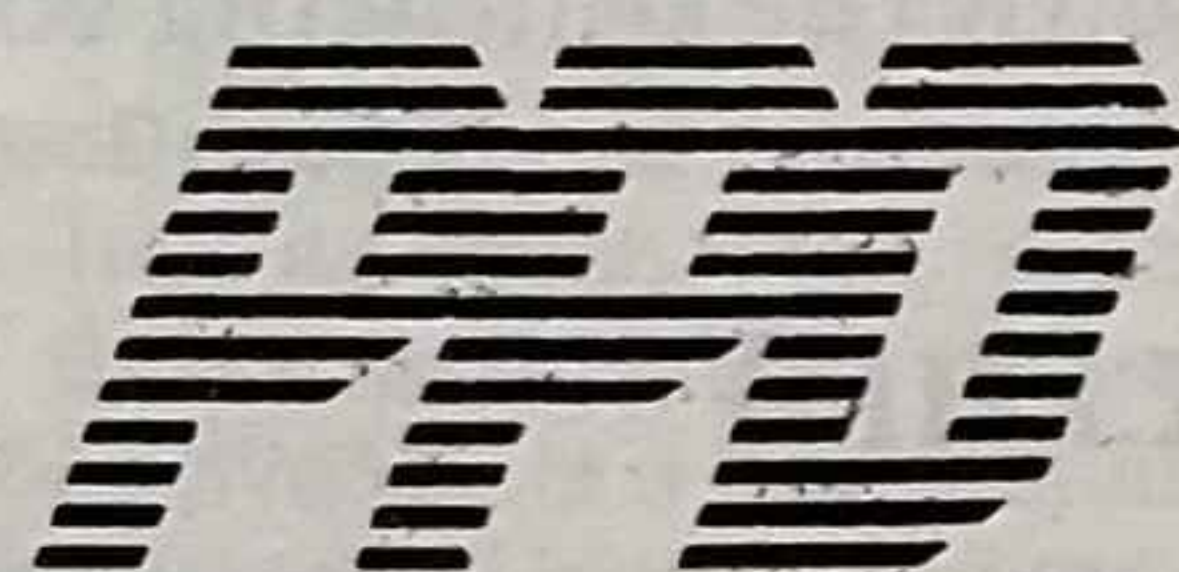
CANADA**Sanyo Users Group**

Trekker Armstrong
934 5A Street NW #A
Calgary, Alberta
Canada T2N 1R4

Sanyo Microcomputer Users Group (SMUG)

Cavan Kelly
116 Phillip Ave.
Scarborough, Ontario
Canada M1N 3R4

**CLUBS
CLUBS
CLUBS**



**PERIPHERAL
PRODUCTS
DISTRIBUTING**

- RS-232C Serial Communications Interface board for the MBC-550 Series computer \$69.00
- Memory upgrade kits with complete installation instructions.
 - 8 150ns chips/64k set 64.00
 - 16 150ns chips/128k set 108.00
- We received a special order of MAXELL diskettes. Box of 12 diskettes in a hard plastic flip open storage case. LIFETIME WARRANTY. LIMITED QUANTITY.
 - Single Sided/Double Density (MD1) 25.00
 - Double Sided/Double Density (MD2) 35.00
- Okidata Printers
CALL FOR THE BEST PRICES.....

Why should you buy from us?

- Same day shipping (when order rcvd by 2:00 MST)
- Free shipping via UPS ground
- No additional charge for MC, VISA or COD orders
- Overnight and 2 day air services available

**PERIPHERAL PRODUCTS
DISTRIBUTING**

P.O. BOX 11986
TUCSON, ARIZONA 85734

(602) 881-4280

Allow 18 days for
personal checks



**DISKOUNT
SOFTWARE**

We take a Byte out of Prices

PRICKLY-PEAR SOFTWARE:	List Price	Our Price
Fantasy Gamer's Bonanza Pkg.	\$34.95	\$29.49
Trivia Trivia	\$34.95	\$29.49
Additional Trivia Question Disks	\$19.95	\$16.49
Viking!	\$34.95	\$29.49
Astrology	\$34.95	\$29.49
OLYMPIC EDUC. SOFTWARE:		
Appointment Book	\$39.95	\$33.49
Touch Skills	\$39.95	\$33.49
Flyboy	\$39.95	\$33.49
Inchworm	\$29.95	\$25.49
Postmaster II	\$49.95	\$42.49
Body Systems	\$39.95	\$33.49
States & Capitals	\$29.95	\$25.49
Finance Manager	\$39.95	\$33.49
MICHIGAN SOFTWARE:		
Screen Print	\$29.95	\$25.49
Sanyo Direct Transfer	\$29.95	\$25.49
Sanyo Print Spooler	\$39.95	\$33.95
Save Screen	\$24.95	\$21.49
MICHTRON:		
M Disk	\$34.95	\$29.95
DS-Dos Plus	\$49.95	\$42.49
Cashman	\$34.95	\$29.95
Adventure #2 or #3	\$39.95	\$33.95
Demon Seed	\$34.95	\$29.95

★ ★ Limited Quantity — 64K Memory Upgrade \$49.49 ★ ★
Don't See What You Want? . . . Ask!

Send Order To: **DISKount Software**

9860 East Mary
Tucson, AZ 85730
602-298-3624

Personal check welcome . . . No delay — Add \$1.50 for each program ordered (4.50 max.). Add \$2.00 for C.O.D. AZ residents add 7% sales tax.

Delving deeper into *EDLIN*,
we work our way closer
to the level of
'MS-DOS Master'

December 1984

"Makes Your Wordstar® Shine!"

Level 1 Enhancements—"What you see is what you get."

- Level 2 Enhancements—Improved help menus.

StarPolish supports standard WordStar control codes. In addition, **StarPolish** provides faster and simpler Word control codes and a custom HELP screen to display them.

Level 3—Technical Symbol Support and Keyboard Map.

Now you can use scientific and engineering symbols in your WordStar documents and print them out on your dot matrix printer. This level has an on-screen map of the keyboard to show you what key produces what symbol. Polished WordStar is completely compatible with unpolished WordStar, MailMerge[®], and SpellStar[®].

StarPolish is a trademark of TDI Systems, Inc. A-OK is the sole rep. for the Sanyo version. A-OK's conversion of **StarPolish** should be complete and tested before 12/84.

StarPolish Sanyo MBC 55x version—Level 1 only	\$75
Levels 1 and 2 only	\$95
Levels 1, 2, and 3	\$125
StarPolish IBM Version—Levels 1, 2, and 3	\$125
StarPac—InfoStar® (DataStar® and ReportStar®), SpellStar, and MailMerge for your Sanyo MBC 55x	\$249

"A Quality Ram Disk for Sanyo"

TurboDrive550 turns your unused RAM into a disk drive.

TurboDrive550 is very fast.

- Speeds up all disk intensive processing.
- Makes WordStar and FORMSORT run more quickly.
- Much faster than a hard disk.

TurboDrive550 has no moving parts.

- Thus it's much more reliable than floppy and hard drives.
- Saves wear on your disk drives and diskettes.

TurboDrive550 is a low-cost alternative to a second disk drive.

TurboDrive550 is the Phantom Buster. As of 10/15/84:

- **TurboDrive550** works even if you only have 128K, M-DISK™ requires 192K
- Allocate 250K to an M-DISK, fill it with data and it will crash your system. **TurboDrive550** protects you from this.
- **TurboDrive550** gives you all the space you ask for, M-DISK makes you ask for 7K before it will take *any* data.
- A-OK provides a COM file which lets you gracefully free **TurboDrive550**'s space. MichTron provides only one way to remove an M-DISK—RESET.
- **TurboDrive550** is menu-driven, M-DISK has parameters you must memorize.
- You can easily adapt **TurboDrive550** to new DOS versions, with M-DISK you've got to wait.

TurboDrive550 comes **FREE** with every new **A-OK DOS 1-4™** and is available as a \$7 upgrade to current **A-OK DOS** owners.

TurboDrive550 for other Sanyo DOSs \$33

New video board from Sanyo lets you run Lotus 1-2-3, Flight Simulator and most other IBM software employing graphics.

Lotus Board	\$189
--------------------	-------

"The Standard Quad-Density DOS"

We at A-OK Computers thank you for making **A-OK DOS-4™** *the* standard DOS for quad-density drives on the Sanyo. Hundreds of copies of **DOS-4™** are now in use in the most demanding applications—yours. Potential bugs have been identified and corrected, making **DOS-4** a mature, well-seasoned tool. Your constant feedback has resulted in the successive refinement of our documentation. After thorough testing and comparison to would-be competitors,

Scottsdale Systems selected **DOS-4** as the standard DOS supplied with their Silver Fox™. Because **DOS-4** is now the standard, our 730K and 800K formats are also regarded as the standard. Of the quad-density operating systems, only **A-OK DOS-4** supports the very popular **PrintScreen550**. *Soft Sector* sums it up well in their September 1984 review entitled "A-OK DOS" and **PrintScreen550—An Unbeatable Combination**".

HAGEN™ DOS is A-OK DOS-4.

Don't trust your work to an experimental DOS, be sure your operating system is A-OK.

Our MS-DOS 2.11 version of **A-OK DOS-4** is now available.

Look for these features in a quad-density drive DOS:

1. Employs a legal installation procedure.
2. System boots quad drives from all of the formats it supports.
3. FORMATS, READs, WRITEs, and DISKCOPYs *all* MS-DOS standard formats employed by the Sanyo 550 Series.
4. The system *automatically* recognizes 8/9/10 sector, 40 and 80 track formats without reconfiguration or using alternate drive symbols (e.g. E:, F:, etc.).
5. Uses low-cost ordinary double-density diskettes.
6. Control C and Control S support.
7. Built-in ASCII dump.
8. Supports the *only* graphics screen dump software built into the DOS—**PrintScreen550**.
9. Free ramdisk—**TurboDrive550™**
10. Uses the standard **DOS-4** 730K and 800K formats.

A-OK DOS-4 \$55

"If You are Serious about Data Security"

- What is **N-CODE**?
N-CODE allows you to encode your data files so that no one else can use the information in them, thereby protecting your sensitive or valuable information.
- Who needs **N-CODE**?
 - Businesses with sensitive personnel or valuable financial data
 - Lawyers, Doctors, Psychologists, Pharmacists, etc.
 - Bankers
 - Anyone who doesn't want their privacy violated or their communications intercepted.
- **N-CODE** is effective through a multi-layered security structure
 - **N-CODE** employs a complex encryption methodology.
 - *Each* purchaser has a unique coding process. **NO OTHER DATA PROTECTION SOFTWARE YOU CAN BUY HAS THIS! N-CODE** does not use DES.
- **N-CODE** provides a unique pre-assigned password.
- **N-CODE** requires a user-selected key-up to 20 characters.
- **N-CODE** is easy to use
 - All functions are menu-driven or prompted with clear instructions on the screen.
 - **N-CODE**'s User Manual includes a step by step Tutorial to help you get started.
 - The User Manual has chapters on each major function to help you gain easy mastery of **N-CODE**.
 - Each screen message is numbered for easy look-up in the complete Reference Manual.
- **N-CODE** is fast
 - Less than 2 seconds to set up for encryption or decryption.
 - About 1 second per K of data to or from floppy.
 - About 1/3 second per K of data to or from hard disk.

If you won't compromise on data security, N-CODE is for you.

Officials of the government have informed us that N-CODE may not be exported without a license.

N-CODE for the Sanyo MBC-550 Series	\$129
N-CODE for the IBM PC	\$199
N-CODE Demo disk	\$ 10

DEALER, DISTRIBUTOR, AND OEM INQUIRES INVITED

SOFTWARE AND HARDWARE DEVELOPERS

Contact us to market your creation. We value our programmers, we give royalties amounting to 30% of the gross.

A-OK Computers • 816 Easley St., Suite 615 • Silver Spring, MD 20910 • 301-585-5105
Affiliate: SL Computers, 3402 Fernandina Road, Suite C-4, Columbia, SC 29210. 803-731-9379

© Copyright 1984 Apollo Optics & Kinematics, Inc.

2 ENTER

* 2
2:*Chicago, IL
2:*_

* 2
2:*Chicago, IL
2:*Chicago, TX

1P ENTER

Let's have a little fun with San Fran-

Now that we've made a mess of San Francisco, let's put it back to the way it was. Not by more editing, but with *EDLIN's* panic key, PF10. This key tells *EDLIN* to void the current edit line — make no changes. This can be very handy when you discover that you've made a mistake in editing. Press PF10 and your screen will look like this:

* 10
10:*San Francisco, CA
10:*Sancisco, CA \

* 10
10:*San Francisco, CA
10:*Sancisco, CA \
San Francisco, CA_

It may seem very awkward for you, at this point, to remember to press PF-this or PF-that to copy this and delete that in a line when it would be simpler to just retype the silly thing. Once you're used to using the editing keys — you'll be surprised how quickly you'll get the hang of it — it will seem natural.

The line editing function keys are just a part of the features available to you with *EDLIN*. We will conclude this three part study of *EDLIN* in January with a close examination of *EDLIN* commands. You already know about some of these such as 'P'age and 'E'nd, but there are several more that make *EDLIN* a very helpful tool.

PF2 I

* 2
2:*Chicago, IL
2:*Chicago, _

cisco by removing the space and “Fran” to make it “Sancisco”! No particular reason — just for practice. Since San Francisco is on the tenth line, tell *EDLIN* to edit that line by typing:

10 ENTER

We want to keep all the characters up to space, “San,” so press PF2 and the spacebar. The screen will look like this:

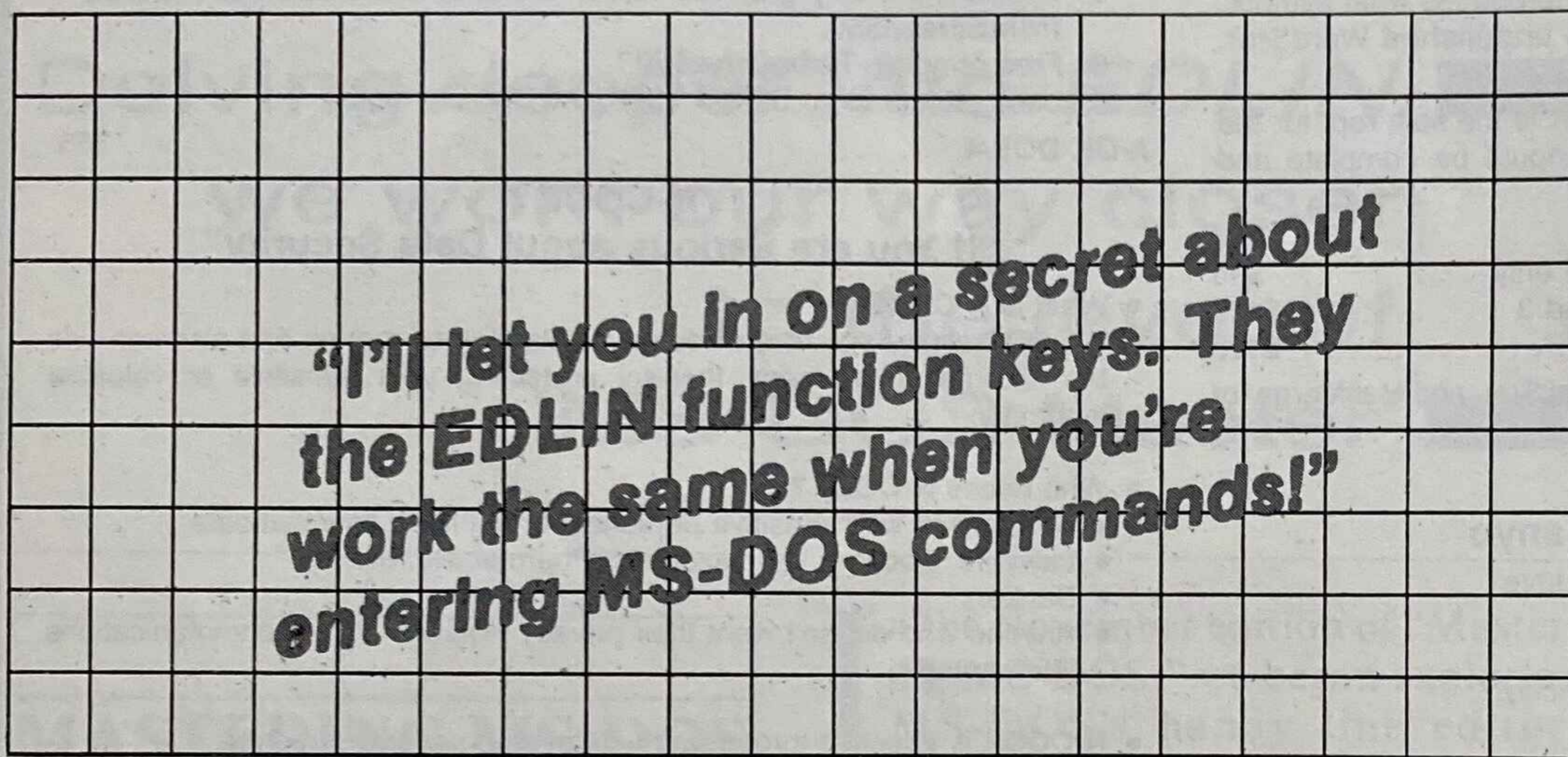
* 10
10:*San Francisco, CA
10:*San_

Now, we want to delete “Fran,” or all the characters up to the “c.” Press PF4 and a lowercase ‘c’ like this:

PF4 c

The screen will not change, but something has happened! Press PF3 to copy the remaining characters from the template (don't press ENTER yet), and you'll see this:

* 10
10:*San Francisco, CA
10:*Sancisco, CA_



A-OK Computers

The Center of Creation and Dissemination of Sanyo PC Software and Hardware

PrintScreen550™

"Fast, High-Resolution Graphics and Text from Screen to Printer with One Keystroke"

- **PrintScreen550** is designed for the everyday needs of most users.
- **PrintScreen550** capabilities
 - Prints a screenful of graphics to the most popular printers.
 - This prints everything on the screen whether it's graphics or text.
 - User has the option to rotate the image on the paper. This permits Okidata 92s and other printers with less than 640 horizontal dot positions to print out the full screen.
 - Turns your Sanyo into a high-resolution graphics machine.
 - Multiscreen facility permits a printed image to be 640 dots by an almost unlimited number of dots in the perpendicular direction.
- **PrintScreen550** is flexible and easy to use.
 - Interactive mode
 - Works like the "Print Screen" button on the IBM-PC.
 - One keystroke does it all. No need to embed commands in BASIC. No extra programs to execute.
 - Same single keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
 - Batch mode can be activated in BASIC by a one-line command.
- **PrintScreen550** is very fast and a lot of fun.

A-OK's **PrintScreen550** software pulls the Print Screen button off the IBM-PC and puts it on your Sanyo MBC-550 series computer.

PrintScreen550 is an option to any DOS from A-OK for a meager. . . \$24

A-OK™DOS

"Not just another double-sided DOS"

- **A-OK DOS** now includes **TurboDrive 550™** free.
- **A-OK DOS** is more generally useful than MS-DOS 2.11.
 - **A-OK DOS** is much faster than 2.11.
 - Supports all the disk formats 2.11 does.
 - User-controlled scrolling in *all* sub-systems not just DOS.
 - Prints a screenful of text to any Sanyo-compatible printer.
 - Interactive mode
 - with one keystroke
 - same keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
 - Does not interfere with program execution or affect the data.
 - Batch mode
 - Can be activated in BASIC by a one-line command.
 - Interrupt-driven and can be called from programming languages.
- **A-OK DOS** supports:
 - any combination of up to four single and double-sided drives.
 - double-sided drives support single and double-sided diskettes.
 - 8 and 9 sector formats—360K, 320K, 180K, and 160K.
 - runs all software supported by MS-DOS 1.25.
- Compatible with other extensions.
 - works fine with M-Disk and **PrintScreen550™**
- Corrects flaws in MS-DOS 1.25 without sacrificing its strengths.
 - If you try to copy a single file to an unformatted disk, **A-OK DOS** does not crash the system like 1.25 and its other double-sided versions do.
 - Messages are easier to understand and use than 1.25 and 2.11.

We think you'll find **A-OK DOS** better than the competitors', and at a modest price.

A-OK DOS \$35

"AMBIZ-PAK"™

Nine programs for Amway Product Distributors \$100

XCord550™

"Extension Cord for your Sanyo PC Keyboard"

This is a special six-foot long extension cable that lets you place your keyboard in a more comfortable position, such as on your lap, or another part of your desk.

XCord550 is easy to use. Your present keyboard cord plugs into one end of the **XCord550**. The other end of the **XCord550** plugs into your Sanyo MBC-550 series computer.

XCord550 \$28

RS232C Serial Boards IN STOCK \$74

128K Memory Upgrade Kit 150ns chips. \$99

A-OK DOS-2™

"INCREASE THE CAPACITY OF YOUR CURRENT DRIVES"

- All the features and formats of **A-OK DOS**
- PLUS it reads, writes, and formats 10-sector formats
 - 400K per double-sided diskette on DSDD drives
 - 200K per single-sided diskette on SSDD and DSDD drives
 - uses ordinary diskettes
 - pays for itself in saved diskettes.

A-OK DOS-2 \$45

800K PER DISK DRIVE

A-OK DOS-3™

"A-OK DOS for Double and Quad-Density Drive Systems"

- All the features of **A-OK DOS**
- PLUS up to 4 double-density and quad-density drives
 - on double-density drives:
 - reads all diskettes written by MS-DOS 1.25 and 2.11
 - formats and writes all formats read by 1.25 and 2.11
 - reads, writes, and formats 200K SSDD diskettes
 - reads, writes and formats 400K DSDD diskettes
 - on quad-density drives:
 - reads, writes, and formats 730K and 800K on ordinary diskettes.

A-OK DOS-3 \$55

A-OK DOS-4™

"A-OK DOS for Exclusively Quad-Density Drive Systems"

NOW FOR MS-DOS 1.25 AND 2.11

- All the features of **A-OK DOS**
- PLUS up to 4 quad drives—3.2 Megabytes of *removable* medium!
 - quad drives read all diskettes written by MS-DOS 1.25 and 2.11
 - quad drives read, write and format 160K, 180K, 200K, 320K, 360K, 400K, 730K, 800K formats on ordinary diskettes.

UPGRADE TO 400K PER DRIVE

Increase your disk capacity to 400K per drive using A-OK's DSDD Kit™ which includes:

- 2 first-quality new TEAC 55B double-sided double-density (DSDD) disk drives which replace the TEAC 54A's in your SANYO.
- **A-OK™DOS-2.**
- Complete, easy instructions.
- All parts needed.
- 1 year warranty.

DSDD Kit \$389

DSQD Kit™

Same as DSDD Kit but with 2 800K TEAC 55F drives and **A-OK DOS-4**

DSQD Kit \$429

Ada for SANYO?

You bet! Now you can use the language of the future on your Sanyo or nearly any other micro. Janus/Ada is great for learning Ada and for serious applications development. Janus/Ada's 16 bit version supports floating point arithmetic via 8087. Available are: Pascal to Ada translator, Ada optimizer, source code for run time libraries, 8088 (8086) to 8080 cross compiler, site licenses, and the source code for the compiler (itself written in Ada). The compiler package for MBC series costs only \$495. Get started now with the Janus/Ada manual—\$35.

UPDATE POLICY

We at A-OK are constantly improving our products. If you are a registered owner of software developed by us, we will send you the enhanced version of that product for a \$7 shipping and handling fee.

New Products

A-OK Computers is developing a complete family of software and hardware for the MBC-550 Series computers. All of these products will work together in a synergistic, integrated way. Ask your dealer about our products. If not available there, you are welcome to order from us.

If you'd like to be involved in developing software or hardware (or have already developed such), please contact us. We can provide the technical and other support needed to quickly and efficiently develop a high-quality product. A-OK will aggressively market your product.

Orders may be placed immediately.

Please send money order or cashiers check. Personal or company checks require 2-3 weeks to clear. Prices reflect a 3% cash discount. MasterCard/VISA/CHOICE accepted. MD residents add 5% sales tax. Out-of-state order, no tax. Prices subject to change. All brands are registered trademarks. 20% restocking fee for all returned merchandise.

A-OK Computers 816 Easley St., Suite 615 • Silver Spring, MD 20910 301-585-5105

Affiliate: SL Computers 3402 Fernandina Road, Suite C-4 Columbia, S.C. 29210 803-731-9379

REVIEWS

Software review

Freeform — Freedom In A Menu-Driven Database

I like database programs. This is most probably because, as an essentially unorganized person, a database lets me organize thoughts and ideas. It lets me keep my "fingers on facts" — something I do not do very well in my head.

(In my own defense, I must say that there *are* a lot of facts in my head. I am one of the better players of "trivia" games, but that is another story.)

Such things as telephone numbers, addresses, appointments and the like confound me. Yet, as with most any busy person, I do not have a lot of time to mess with setting up complicated database programs, such as something like *dBASE* requires.

I prefer what are called menu-driven database programs. These are the ones which give you a lot of options on the screen and let you set things up the way you want them to be. One of the problems with menu-driven systems, however, is that they will usually only let you set things up *their* way.

Freeform, by TMP Software for the Sanyo MBC-550 series computers, meets the two criteria that I consider most important in establishing a database. It is menu-driven, but

is structured — as the name implies — in such a way that you can design a database pretty much, well, free form.

What I am saying is that *Freeform* is flexible, yet easy to use. This is no small programming task, but TMP Software has done it.

They do it with a concept I have not seen before — the concept of "electronic cards" in an electronic file. Each card has 13 lines of text, and you can have multiple cards for any given situation.

In working with *Freeform*, I followed their tutorial to set up an appointment calendar — not usually an easy feat. This is simply because, as far as I am concerned, there are two important criteria in an appointment calendar: The ability to show appointments by day, but also, to find some single appointment that I just *know* is sometime this week, but forgot exactly when.

Freeform makes this very easy because it uses a very different method of selecting key words in any entry. With all other database managers that I have seen, you set up a very structured system and then make your data fit. In this example, you *can* set up a database with days, times, person's names, activities and the like. But you have to define the length of each of these entries. You end up either wasting a lot of space or making the whole data entry process very complicated.

Not so with *Freeform*. This is simply because once you have typed in whatever information you need, you go back and select your own key words to search on. To illustrate this, let us suppose you have an entry called "Meet Mr. Jones About Taxes." You could highlight both "Jones" and "Taxes." Then, when trying to remember when it is that you are supposed to meet Mr. Jones, you can search on either "Taxes" or "Jones." Neat!

Each card can be titled and you can have up to nine pages for each card. Since each page holds 13 lines of 37 characters each, this adds up to a lot of information available for any day.

Of course, a calendar is not very useful unless it can be printed out. This is accomplished simply, with each card printed as a separate entity. It might be nice to buy some of those continuous index cards available from a number of places and use them for *Freeform* printouts.

It is important to mention that you can use "wild cards" in your search process. So, if you wanted a list of, say, all "bid specifications," "bid meetings" and "bid lettings," you could search on "bid *" and get all three.

One thing I did not like, however, is the way in which search results are reported. When you search for a key word or phrase, *Freeform* responds with the names of the cards on which the information is contained. I would have liked it better if it just went to fetch the card itself and display it on the screen.

But that is a pretty minor complaint given the freewheeling types of things that *Freeform* will allow you to do. If all you want is a name and address file, some other database program will do the job for you. But, for those applications that require a lot of text, very variable search criteria, speed and efficiency, I have yet to see anything that can match the abilities and capabilities of *Freeform*.

(TMP Software, 2431 E. Douglas, Wichita, KS 67211, 316-684-5281, \$225 on either single- or double-sided disk)

— Lonnie Falk

Copylink — The Missing Link In Your Telecommunications System

Recently advertised as being two programs in one, *Copylink* by U.S. Digital is actually three programs in one: a full featured terminal program, a sophisticated file transfer program and a host program capable of providing its users with remote terminal capabilities.

The Terminal Link

As a terminal, *Copylink* has two very distinct modes of operation: command mode and terminal mode.

In the command mode, *Copylink* can be pre-configured to take full advantage of auto-dial and auto-answer modems such as the Hayes Smartmodem used in this review. With over eighty commands available, the user can set all session parameters well in advance of initiating calls to any remote systems. Setting the parameters in advance usually consists of: setting the modem parameters, opening a terminal "receive" file, presetting the system flags (filter, echo, quiet,

multiple, etc.) and constructing EOL and auto-log strings.

Once the parameters are set, the user can save them through *Copylink*'s "Custom" feature by typing CUSTOM at the command line. *Copylink* will save this configuration to its overlay file and separate versions can be maintained.

Copylink provides an on-board directory for storing frequently used numbers. Limited to about 10 names and numbers, this limitation can be overcome by placing just the names of other directories in the on-board directory, such as *BOARDS.DIR*, *HOST.DIR* and *OTHERS.DIR*. Using any text editor or word processor, the other directories can be created as separate files.

Entering CALL at the command line will bring up the "Enter Number to Call" prompt. The user then types in the desired number. Entering CALL followed by a name on the command line will initiate *Copylink*'s "search directory" function. *Copylink* will go first to its on-board directory and, finding just the name of another directory, it will search that directory for the name entered on the command line. If this search proves unsuccessful, *Copylink* will return to the next listing in its on-board directory until the name is found or all directories are searched.

Once found, *Copylink* will call the number indicated and attempt to establish a link with the computer at the other end. If the connection is made, *Copylink* enters the terminal mode. For dumb terminal operations, TERMINAL could have been issued at the Command prompt.

Although *Copylink* is considerably well documented, I could find no reference to selecting "pulse" or Touch-Tone dialing. A call to U.S. Digital in Oregon confirmed this omission and other parameters not previously documented.

Advanced Micro-Computer Applications

AGRICULTURAL AND BUSINESS APPLICATIONS SOFTWARE
FOR THE
SANYO MBC-550/555 SYSTEMS

AMA SOFTWARE
P.O. BOX 3024
SPRINGFIELD, MO 65808

(417) 869-1917

AMA 
SOFTWARE

DISTRIBUTOR-DEALER INQUIRIES INVITED

Touch-Tone can be selected by placing a 'T' in front of the number. The modem speed can also be selected or overridden by placing a "1" after the "0-9" (log strings) for 300 Baud and "2" for 1200 Baud. U.S. Digital's representative was also helpful in setting the DIP switches inside the modem. Switches 2, 6 and 7 should be up with all the rest down if the user intends to use *Copylink's* "remote" features.

Once in terminal mode, *Copylink* can be controlled through "escape" sequences. Should the user forget to set up a receiving file, this can be accomplished by entering ESC R. The user is then prompted for the receiving filename. A colon (:) appearing at the front of each line indicates an active receive file. The "save" facility can then be toggled on and off with other escape sequences. Entering ESC H will call *Copylink's* online help facility and ESC A will provide additional help information. *Copylink* has over seventy-five escape sequences documented: sequences to toggle the printer on and off, local echo on and off, print the status line or modem configuration and many others.

The Transfer Link

One of the most important aspects of any communication program is the ability to transfer files from one system to another. Commonly referred to as uploading and downloading, *Copylink* provides three separate protocols to accomplish transfers. The protocols are normal, checksum, and "fast." Should they fail, *Copylink* also provides for a "blind" transfer which performs no error checking and should only be used as a last resort.

Normal is the default protocol for *Copylink*. It uses CRC error checking and is the most widely used by other systems today. It should always be your first choice.

Checksum may also be selected; however, it has the disadvantage of being less reliable than the other two.

Fast is a special protocol unique to *Copylink*. Fast will allow the user to send data in 1K blocks, which results in faster transfer at higher Baud rates (1200 Baud and above). If a large number of data transmission errors occur, it may be advisable to switch to the normal mode. Fast mode can sometimes double the speed of transfer over normal mode if used in long distance data transfers over a low-error phone line.

With "multiple" mode enabled, users may transfer whole disks of files without previously naming them. If the multiple mode is off, the filenames received will have to be specified. This is referred to as "prenamed file transfers." Only one file at a time may be sent using this method.

The advantage of turning the multiple mode off is that it makes *Copylink* compatible with the protocol that other

communication programs, most notably *XMODEM* and *MODEM7*, use. In some cases, users will need to enable the checksum mode to transfer files with the older programs. Generally, you should have the multiple mode set to on.

With the binary mode on, binary transfers are allowed in terminal mode. A full (eight bit) byte of data is received. This allows *COM* files to be received or sent. Because of the increased possibility of errors, the transfer should be done with the error-checking "Receive" command if possible. Binary mode should only be used if other systems cannot run *Copylink*. No parity will automatically be selected with binary on.

Normally, *Copylink* will return to the command mode after completion of transfers. By selecting either "TReTurn" or "CRETurn", *Copylink* can be instructed to return to terminal mode or *Copylink's* special "chat" mode. The chat mode has the effect of linking two terminals together. Whatever is entered on one terminal will show up on the other. File transfers are not allowed in the chat mode.

The Remote Link

If communicating with other systems is all you expect from a communications package, *Copylink* will provide this capability as well as any of the other packages available today for the Sanyo 550/555. Eventually there will come a time when you will want to communicate with your own computer. By entering AUTO at the command line, *Copylink* will respond to this request by enabling auto-answer and placing itself into a "remote idle state."

For instance, before leaving home for work or to a meeting with other computer users, you can bring *Copylink* up with the AUTO command and call your computer from any other computer using whatever terminal package they might be using. Once the connection is established, you will be greeted by *Copylink's* command line. At that point, you will be able to control your computer as if you were sitting at the console. You can upload and download files to your computer or their computer and, as mentioned earlier, you can use the "fast" protocol if they are also running *Copylink*. Although you can not instruct your computer to exit from *Copylink*, you can perform some system maintenance from within *Copylink*, including copying, moving, renaming, and deleting disk files.

The remote aspects of *Copylink* may prove to be one of its best features and it is certainly why I chose *Copylink* as my first choice in communications software.

In Summary

Considering *Copylink's* many features and capabilities, thoroughness of documentation, the wide variety of computer systems capable of running it, and the online directories and help facilities, you would expect this package to be priced out of the range of most users. Not so! Priced at \$99.95, *Copylink* is well within the reach of other competitive packages offering substantially less.

If error-free communications are important to you, and communicating back with your own computer is seen as an absolute necessity, I highly recommend *Copylink* by U.S. Digital.

(U.S. Digital Corp., 5687-D S.E. International Way, Portland, OR 97222, 503-654-0668, \$99.95)

— G.L. Swearingen

PUBLIC DOMAIN SOFTWARE

MSDOS LIBRARY of over 100 disks with basic programs converted to ASCII format for SANYO 550/55. Send self-addressed envelope for more information and hardware/software catalogue.

DS/DD DISK DRIVES (FULL YEAR WARRANTY)

TEAC 55B	\$209.00
PANASONIC JA551-2	\$189.00
64K RAM MEMORY UPGRADES 150ns	\$69.95
5 MEG HARD DISK	\$1299.00
PUBLIC DOMAIN DEMO DISK	\$10.00

C-TEK SYSTEMS 132 N WASHINGTON ST.
(703) 241-4952 FALLS CHURCH, VA. 22046

ProportionalStar — Proportional Spacing With WordStar And A Daisy Wheel

ProportionalStar is a patch that installs true proportional spacing in *WordStar*. The package includes a double-sided MS-DOS disk with the patching utility, patches for 18 daisy wheel printers, a Hex-to-ASCII utility and several test documents, an installation manual and a book, *Proportional Spacing on WordStar*, which serves as the detailed documentation.

ProportionalStar allows most popular daisy wheel printers to adjust the space between the letters, as well as between the words, when a justified text file is printed with *WordStar*. This gives the printed page a very professional look, more like typeset material than a quality electric typewriter. It is also more pleasant to read, is supposed to be easier to read, and allows more text per page without seeming crowded.

With the installation manual in hand, the program was

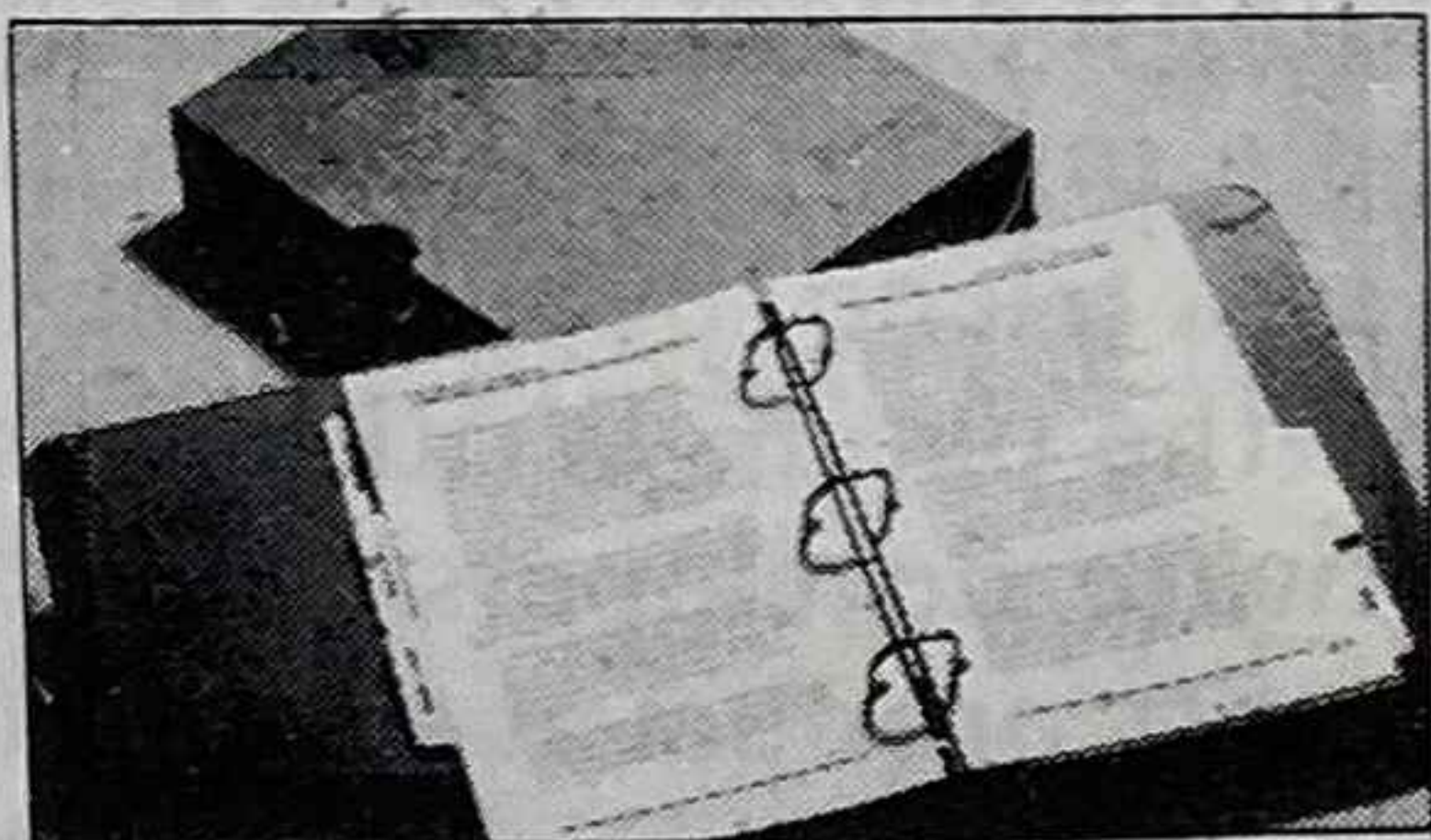
easily installed for an unfamiliar printer by patching into a copy of *WordStar* that was installed for that printer. A test document was printed with several different options available in the patch and the program worked as claimed. The result does look nicer, and my fussy secretary liked the looks of some options better than others, just as the manual suggested.

Only one minor bug was found, the Hex-to-ASCII table was cut short one line when sent to the printer. Writing Consultants tells me that this has been fixed in the interim.

Documentation, other than for the installation, is included in the book *Proportional Spacing on WordStar*, which can be purchased separately. I rate the book as better than average documentation; I've seen better only from much larger companies. This is not a programmed learning text. It does require some thought to use the examples they give and to analyze the problems for the best use of the program for individual printers and needs. I consider the thought requirement an asset, although in this era of Pavlovian teaching, some will miss the ease of a programmed text.

The book is also a stand-alone text for the hand installation of the program; users that have more time than money can purchase the book for a \$50 savings. You do not have to be a hacker to make the installation via the book, but you will need more time to understand and install proportional spacing. The book has a complete index, a rarity in the software industry.

When I was in college chemistry, the professor would note that in laboratory, neatness *does* count. If your business requires a very neat and professional look in correspondence, this patch, a good daisy wheel printer and a carbon



ACCOUNTING FOR MICROS

\$395/Set of Four

\$325/Set of Three
\$465/Set of Five

ACCOUNTING FOR MICROS IS a set of interactive accounting programs which meet professional standards. Programs are fast and easy to use, with complete and concise documentation. Slipcase and binder manual also includes valuable tutorial information on bookkeeping and general small computer use.

GENERAL LEDGER.....\$125
Allows up to 1,000 accounts & 1,000 transactions/month. Retains mo/end balances for Last Year, This Year and Forecast. Includes Cash Disbursements, Cash Receipts and General Journals. Reports include Balance Sheet, Income Statement, Annual Summaries and Journal Reports.

ACCOUNTS RECEIVABLE.....\$125
Allows up to 2,500 customers and 1,000 invoices per month. Invoicing can access Inventory Module. Keeps customer names and addresses. Invoice prints on plain paper or any pre-printed form. Statements can be printed at any time.

ACCOUNTS PAYABLE.....\$125
Allows up to 500 vendors and 600 invoices/mo. Records invoices and handwritten checks. Prints computer checks on any preprinted form. Keeps vendor names and addresses.

INVENTORY.....\$125
Allows up to 6,000 parts. Keeps 3 month history of unit sales as well as year to date. With AR, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

PAYROLL.....\$125
Will handle up to 100 employees with six deductions per employee. Deductions may be determined as fixed dollar amounts or percentages, or referred to a table for automatic look-up. Tax tables are easily entered, or purchased separately.

SET OF FIVE.....\$465
SET OF FOUR.....\$395
SET OF THREE.....\$325

PROGRAMS RUN ON MOST CPM AND MSDOS MACHINES

IBM PC, XT, PCjr	Columbia
Kaypro II, 4 and 10	Compaq
Morrow MD2, MD3, MD11	Corona
Osborne I & Executive	Sanyo
Xerox 820 5"	Eagle
TeleVideo	Cromemco
Epson QX-10	Otrona
Apple CPM	Others

DEMO DISK.....\$18.00
Try all 5 programs—order our DEMO DISK for \$18.00 (includes shipping). Condensed versions of the programs will give you the "feel" of both data entry and access. Includes sample reports and instructions.

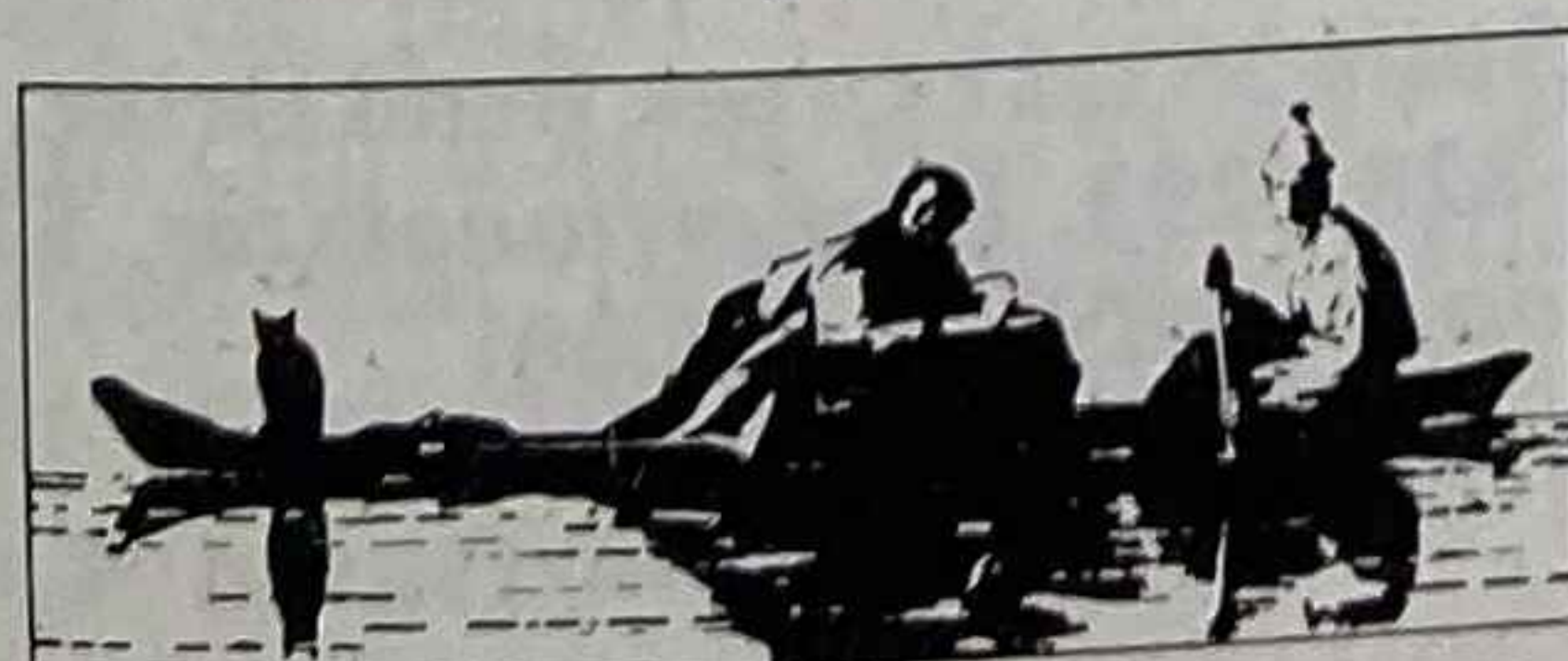
Available direct, from computer dealers, and some B. Dalton Bookstores.

ORDERING: Please specify machine and density. Send check or money order, or use your VISA or MASTER-CARD (please supply expiration date as well as account number). Price includes shipping (MN residents add 6% sales tax). Your order will be shipped by return mail. C.O.D. add \$2.00 per order.

OR ORDER BY PHONE.

612-339-2521

125 N. First St. Mpls, MN 55401



James River Group
Incorporated

ribbon will make your letters smell of success. Newsletter writers wanting photo-ready copy and advertising copywriters will find this useful. Attorneys putting out briefs for tired-eyed judges will love the visual effect of *ProportionalStar*, at much less cost than a dedicated word processor! (A word processor can cost between \$6,000 and \$10,000; a Sanyo MBC-555-2 and quality daisy wheel printer would cost about \$3,500.) There are people for whom *ProportionalStar* is a waste: hackers without business writing interests (unless they are interested in hacking about *WordStar*), users of dot-matrix printers or unsupported daisy wheel printers, and the occasional user of *WordStar*.

Although I like *ProportionalStar* and see that many will find it useful, there are some caveats. The first few warnings are for the novice:

1) There are 24 printers listed on the installation menu. If yours is not listed, or not known to you as 100 percent compatible with one on the list, you should make a test first. Print a short document with the dot commands .cw10 before one segment of text and .cw12 before another segment. The two paragraphs should be of different widths. If not, you may have to reinstall *WordStar*, or your printer may not support variable or incremental spacing. Check with your printer dealer, manufacturer, etc., (an advantage of buying locally from a reputable and knowledgeable dealer). Once variable spacing is established, a letter to Writing Consultants giving the details of your system, the results of the installation procedure, and what you did to install incremental spacing should be enough to allow them to tell you what printer installation routine to use.

HAVE FULL CONTROL OVER YOUR SANYO SPEAKER WITH THE BEEP STOPPER \$7.95

UNBELIEVABLE DISKETTE PRICES

Box of 10	SS/DD	DS/DD
STORAGE MASTERS	\$16.99	\$19.40
BASF	\$17.99	\$19.70
DATALIFE	\$19.99	\$27.99

QUANTITY PRICES AVAILABLE

HARDWARE

SPIRIT 80 (Dot Printer)	\$264.00
GEMINI 10X (Dot Printer)	\$259.00
JUKI 6100 (Letter Printer)	\$410.00
PRINTER CABLE	\$ 24.95
SANYO CRT 36	\$163.00
SANYO CRT 30	\$124.00

INTEGRATED TECHNOLOGIES

6915 TABLE MT. RD.
TUCSON, AZ. 85718
PHONE: 602-299-2358

2) Beginners will find references to PS (proportional spacing) daisy wheels confusing. To get optimum results, buy a wheel that uses letters with different widths for different letters. (We tried a non-proportional spacing wheel, that is, a wheel with all characters having the same width, such as in a typewriter, and liked the results.)

3) *ProportionalStar* comes on a double-sided disk. The EXE programs take about 148K on the disk and the file WS.COM must be resident in a disk drive to install the patch. Thus, if you have only one single-sided disk drive, installation may not be possible without access to a machine with more disk space. Mr. Wiener, of Writing Consultants, was not aware that the Sanyo 550 had only 160K of disk space and was being promoted as an inexpensive word processor. He promised to look into the matter and said that he expected a solution could be found. If this is a problem for you, write him before purchase. Of course, you could buy the book *Proportional Spacing on WordStar* and hand install the patch. As mentioned above, the instructions in the book make it easy even for the novice, although lots more time is needed.

The program came on a disk that was not write protected, and there was a warning not to copy it without first running it with the registration utility. The information the program will ask for is personal information, not technical, and not about the printer, etc. Copies can be made for your own single machine use, and if you forget your password, it can be recovered by placing the disk in a drive followed by the DOS command TYPE PSP and RETURN.

A short aside is needed here. After registration, the program suggests you make copies. Remember, piracy of programs is no different than stealing a patent. This is a serious program that took some people much time to develop. If you want to give the program to a friend, buy it or the book for the friend and hand-install the patch. Writing Consultants has done what few software developers have done: provided the means to get a quality product at about a third of the standard price of the software. Don't undercut them!

Proportional Spacing on WordStar provides many hints for the serious user of *WordStar*. Techniques for multicolumn printing are fully discussed, as are techniques for the centering of all-caps lines, handling short lines at the ends of paragraphs, proportional spacing in headers and footers, etc. I tried a number of the techniques one evening and they worked with very little practice. The idiosyncrasies of individual print wheels and printers are well covered and hints galore are provided. Further, the manual provides many insights into the structure of *WordStar* — useful in its own right.

In conclusion, I liked *ProportionalStar* and the manual. For many applications this is an ideal program. Teamed with a good printer and the MBC-550/555 with one double-sided disk for installation, the user has quality word processor output at a fraction of the cost of a dedicated system. Those who want immediate results will find that *ProportionalStar* is installed fast enough. For the less well-to-do, *Proportional Spacing on WordStar* provides the same result at a bargain price.

(Writing Consultants, Suite 253, 11 Creek Bend Drive, Fairport, NY 14450, 1-800-828-6293, *ProportionalStar*, \$75.00, *Proportional Spacing on WordStar*, \$25.00)

— David N. Wexler

Screen Print — The Feature That Sanyo Forgot

Screen Print, by Michigan Software, is a program that provides for the user what Sanyo forgot — the ability to print a screen. *Screen Print* provides the user with the ability to send the contents of a screen, either graphics or text, directly to your dot-matrix printer. *Screen Print*, which sells for \$29.95, is interrupt-driven, which means it can be used to print from almost any program. The disk comes with three *Screen Print* programs, one each for Epson, BMC and Gemini printers. It also has two batch files, *START* and *START2*, for copying files from the master disk to the system disk. The documentation is short, but concise, and includes installation and operation instructions.

The instructions for copying the files are correct, however, as with *Character Generator* (another Michigan Software package), an incorrect command is used on the disk for copying the data sets. The batch files use a 'c' command which Sanyo does not recognize. The result is that I had to do single file copies. Having an Epson printer, I had to copy one file, *SD-EPSON.COM*, to my system disk. After copying the file, I loaded *Screen Print* by keying in *SD-EPSON*. The system returned a message to me stating that the "Epson Screen Dump Utility" had been loaded. It is now usable until I power down my Sanyo.

Once loaded into the system, *Screen Print* is available at any time by pressing the following keys:

- 1) SHIFT + CTRL + PF9 — to execute TOF (top of form)
- 2) SHIFT + CTRL + PF10 — to display a message asking for the type of print desired

The types of print that are provided are:

- 1) T — Text this ignores graphics and prints only normal text
- 2) G — Gray prints black as black, white as white, and all other colors shaded
- 3) I — Inverse Gray does the opposite of Gray
- 4) P — Pattern allows the user to select the colors to be printed and those not to be printed. This option gives the user control over all eight colors.

For printing, simply choose the desired format and let the printer do the work. The contents of the video display will be captured on paper. The first time I used *Screen Print*, I found all commands worked as specified. However, I also discovered that, depending on the print selection and the amount of printing, I could use up a ribbon quickly. The reason for this is because of the black backgrounds. The Gray and Pattern-Black selections produce a black back-

ground with gray or white lettering respectively. The Inverse Gray selection produces gray lettering on white background. The remaining selections within Pattern produce black print on white background.

I tried the intervening capabilities on BASIC, *WordStar*, *CalcStar*, *EasyWriter* and Turbo PASCAL. It worked with each of them. I found the text capability especially useful for debugging programs. When output was sent to the screen, I could print it, then list the program and compare the two to help determine where any program problems existed.

I tested the graphics capability by printing the output of the Sanyo demo. The result was the same graphics that appeared on the screen. When the graphics mode is used, it is rotated 90 degrees and thus printed sideways. This is required because the length of the dots on the standard size paper is not large enough to display the image properly.

When using *Screen Print* with *Character Generator*, remember that the only way to print unique characters is with Gray, Inverse Gray or Pattern. Doing this will also rotate the output of the screen 90 degrees. If you attempt to print in Text, the unique characters will be ignored and the original characters will print.

I believe this program is a must for any user. It provides the user with an instant capability of capturing anything appearing on the video screen. It serves for many uses such as debugging, printing pictures, printing graphs, displaying unique character sets and more. In short, *Screen Print* fulfills a basic requirement of all personal computers by providing the capability to immediately print any information appearing on a video display monitor. At \$29.95 it's a bargain — buy it now before the price goes up!

(Michigan Software, 43345 Grand River, Novi, MI 48050, 313-348-4477, \$29.95)

— John E. Schlosser

BUDGET FORECAST SYSTEM \$69.95

Save time and \$, control spending by providing monthly, quarterly, and yearly forecasts. Pay bills from monthly worksheets. Forecast up to 4 years. Estimate taxes. Save program costs many times over. Runs on 128K MS-DOS system.

SANYO UTILITY PACKAGE \$39.95

Plot program to generate and print line, bar, pie graphs. Plus utility program for printer setup, memory dump, more.

Send check or money order to:

BGW SYSTEMS (206) 845-7845
16714 S. MERIDIAN — SUITE 200
PUYALLUP, WASHINGTON 98373

Washington residents please add 7.8%

LOOK!

Legal Software	General Accounting-Star Software
Thought Works-Hard Disks	Micro Main-Hard Disks
Medical-Medicalus	Accountants-TCS Software
Farmers-Vertical Software	McGraw Hill-Software+Publications

SANYO 555-2 W/CRT 30 ONLY 1200.00 + FREIGHT
SANYO 555-2 W/CRT 36 ONLY 1230.00 + FREIGHT

DEALER INQUIRES INVITED

B-T Distributors

P.O. Box 3115

Carbondale, IL 62902-3115

(618) 529-5557

(618) 687-3368

Catalog available upon Request

My Word! — A Fast And Powerful Word Processor

What could be better than *WordStar* and cost less? Well, how about something that works faster and comes with a mail/merge option built in at no extra cost. Maybe you would like to be able to embed graphics characters and special characters in your text, or perhaps you would like to be able to sort a table or a whole file in a matter of seconds. Now, some of you might be saying, "Why should I buy a new word processor when I got *WordStar* and *EasyWriter* free with my Sanyo?" The answer to that one is easy. This word processor is only going to cost you \$25 for the entire package. Now you're thinking, "Even though it only costs \$25, I don't have the time to learn how to use a new word processor." If you've learned how to use *WordStar*, you won't have to. This word processor uses the same command syntax as *WordStar*. It will also use all of the files you've created with *WordStar*, *MailMerge* or any other standard text file. And you get all of the above with a 30-day, money-back guarantee.

This amazing word processor is *My Word!*, by Bruce Tonkin. Even more incredible, it was written entirely in BASIC. Here is how it was done. First it was written with a pre-processor called PBASIC (also written by Bruce Tonkin) which allows you to be very structured with BASIC (it has subroutine and function libraries and doesn't use line numbers, just labels). PBASIC generated standard MicroSoft BASIC code which was then taken and compiled with a BASIC compiler for that extra speed. The above might sound complicated, but Bruce wrote *My Word!* in one month. He feels that most people pirate software because most of it costs more than an average family spends on food in a month. That is one of his reasons for putting such a low price on his software. The BASIC and PBASIC source code also sells for an additional \$25 (for both). With the source code, you can change anything about the word processor you want or add whatever new functions to it that you wished someone else would have. After you make your changes and have your BASIC recompiled, your word processor will then be just the way you want it.

Now, if you think you get what you pay for and \$25 means poor quality and no customer support, then you're wrong. I had a problem getting the translation table working (the translation table is another feature of *My Word!* that allows you to translate any character into any other character or characters while it is printing). I called T.N.T. Software (at the technical number), which is Bruce's company, and instead of trying to explain my problem to a secretary, Bruce himself answered the phone. He was very helpful and soon I had the problem worked out. What more could you ask for \$25? (He didn't know I was a reviewer until after the conversation was over and I needed additional information for the review.)

Getting down to the nitty-gritty, one of the first things you'll notice when you open the package is that the manual would not crush you if it fell on you. This 1/4-inch thick, 60-page manual packs all of the necessary information in a good order and includes a tutorial for those who have not used *WordStar*. The table of contents and index are much more detailed than *WordStar's*. The manual is geared to the IBM keyboard, but if you follow a few guidelines, you will have no problem using the Sanyo keyboard.

Now let's see how to use *My Word!* The program will load and display a directory at the top of the screen for the currently logged drive. After you enter a filename, a message will be displayed stating that it is reading in the file or that it is a new file. If the file is new, you may at first think that something is wrong, because instead of seeing a cluttered

VOICE (313) 348-4477

BBS (313) 348-4479



MICHIGAN SOFTWARE DISTRIBUTORS INC. 43345 GRAND RIVER NOVI, MICHIGAN 48050

MICHIGAN SOFTWARE:

PFkey	9.95	Save Screen	24.95
Keyword	9.95	Character Generator	24.95
U.S. Capitals & States	29.95	SDT/Sanyo Direct Transfer	29.95
Screen Print	29.95	Sanyo Host	149.95

CUSTOM SANYO DUST COVERS

Grey Leather — Two Year Warranty	
Green Monitor and CPU/ONE Unit	29.95
Keyboard/Only	12.00

MICHTRON:

Cashman	34.95	Utility Disk	34.95
Demon Seed	34.95	Super Zap	49.95
Grafiti	39.95	Mi-Term	79.95
DS Dos	49.95	M-Disk	34.95
Joystick Extender	29.95	Solitaire	34.95
Mi-Key	34.95	Picasso	99.95

LEVEL IV:

Print Spooler	39.95	Term 123	79.95	Grafix	99.95
---------------------	-------	----------------	-------	--------------	-------

SANYO 555 COMPUTER SYSTEMS CALL FOR PRICES

VISA • MASTERCARD • AMERICAN EXPRESS

• DEALER INQUIRES INVITED •

Prices subject to change

Add 3.00 shipping and handling

10 MEG EXTERNAL HARD DISK \$1,245

MISSOURI RESIDENTS ADD 5.625% SALES TAX. FOR SANYO 550/555 SERIES COMPUTER ONLY. SIX MONTH LIMITED WARRANTY.

SYSTEM COMPLETE WITH HOST ADAPTER AND PATCHES TO 2.11 DOS. READY TO RUN, 10 MINUTE INSTALLATION.

LEMCO

THE LEMBERGER CO.

100 N. MAIN ST., VIENNA, MISSOURI

"Dealer Inquiries Welcome"

65582

SERVING MICROCOMPUTER USERS SINCE 1978 PHONE (314) 422-3353

screen, you will see a blank screen with a flashing cursor in the upper left-hand corner. Bruce doesn't like a cluttered screen and I wholeheartedly agree with him. If I'm typing text I want to see text, not all of the other information that *WordStar* assumes you want on the screen. If you want to know information like your current cursor location, then just press ESC and it will be displayed at the bottom of the screen. If at any time you need help remembering a command, just press PF1 and *My Word!* will display the functions of the PF keys, the cursor control keys and most of the text editing keys.

Now let's look at some of the differences between *My Word!* and *WordStar* and you must be the one to decide whether they are good or bad. *My Word!* does not right-justify the text on the screen. This is for a very good reason. If it did do right justification on the screen and you wanted to change all occurrences of "data disk" to "program disk" in your file, you could run into some problems. If the right justification had put an extra space or two between "data" and "disk," it would not be replaced by "program disk." Since *My Word!* does not right-justify on the screen, it will never have this problem. This does not mean you cannot right-justify your printed text. *My Word!* will ask you whether you want your text right-justified before it prints it on the printer.

Another difference is that *My Word!* does not have a ^KV option (^ stands for CTRL plus the following key). This allows you to copy a block and have the old block deleted in *WordStar*. What you must do instead is use ^KC to copy the block and ^KY to delete the old block. ^P allows you to insert control codes into your text. This is for

sending codes to your printer for special modes of print. *My Word!* does not allow you to set the left margin on the screen, but I never used this option on *WordStar* anyway. *My Word!* also doesn't have tab set capability. All tabs come preset to every fifth position. This did prove to be a small inconvenience to me, but there is already an enhanced version of *My Word!* out that allows the tabs to be set. The enhanced version sells for \$35 and also has a calculator mode that allows you to perform calculations while in your word processor, then insert the answers into the text with a simple keystroke.

Perhaps the biggest difference is the sort option. To sort a table, you define the beginning of the block in the column that you want sorted, then drop to the last line to sort and mark it. The block is highlighted in inverse video and the sort is carried out in either ascending or descending order.

All of the dot commands are the same with the exception of some of the *MailMerge* commands. The difference is in the .RV (Read Variable) and .DF commands (Data File). A .RV in *WordStar* would allow you to put multiple variables on one line. *My Word!* will allow only one variable per line.

Another difference is with the .FI (File Insert). *My Word!* does not do a file insert; instead, it uses .LF to do a "Link File." A Link File will name a file to link to the current one you are printing. The linked file can then name another link file and so on. All linked files retain page numbering, margins, headings and other things from the previous files until another dot command is issued inside them. A dot command that was added to *My Word!* is the .CF (Close File) command. The .CF will close the current data file and allow you to open a new one.

High-Performance Computer System

A highly-efficient personal computer system with potential for expansion

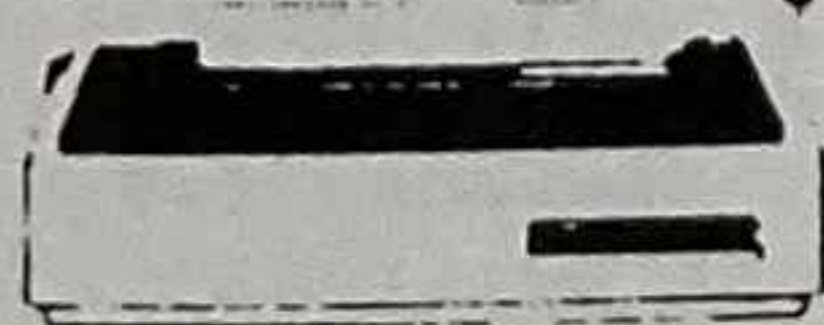
CRT 36

*MBC 550

- 16-bit 8088 CPU
- 128 KB RAM, expandable to 256 KB
- 160 KB mini floppy disk drive
- MS DOS operating system
- Detachable keyboard
- Interface for Centronics parallel printer
- Built in Color Graphics
- 12" green phosphor CRT monitor
- 640 x 200 dot graphic display
- 80 characters x 25 lines

MBC 550
Sugg. List
\$999.00

CRT 36
Sugg. List
\$199.00



PR 5000
Affordable Letter Quality
Daisy Wheel Printer

Print	14 cps, bidirectional
Typing Pitch	10, 12, 15 characters per inch
Paper Width	13 inches (Max)
Line Spacing	48 position per inch
Interface	Centronics Parallel Interface

Sugg. List
PR 5000 \$595.00

CR DISTRIBUTING

P.O. Box 2168
Acworth, GA 30101
(404) 928-8791

DEALERS ONLY!

Expandable High-Performance Computer System

A versatile personal computer with the power to perform a wide variety of home and business functions

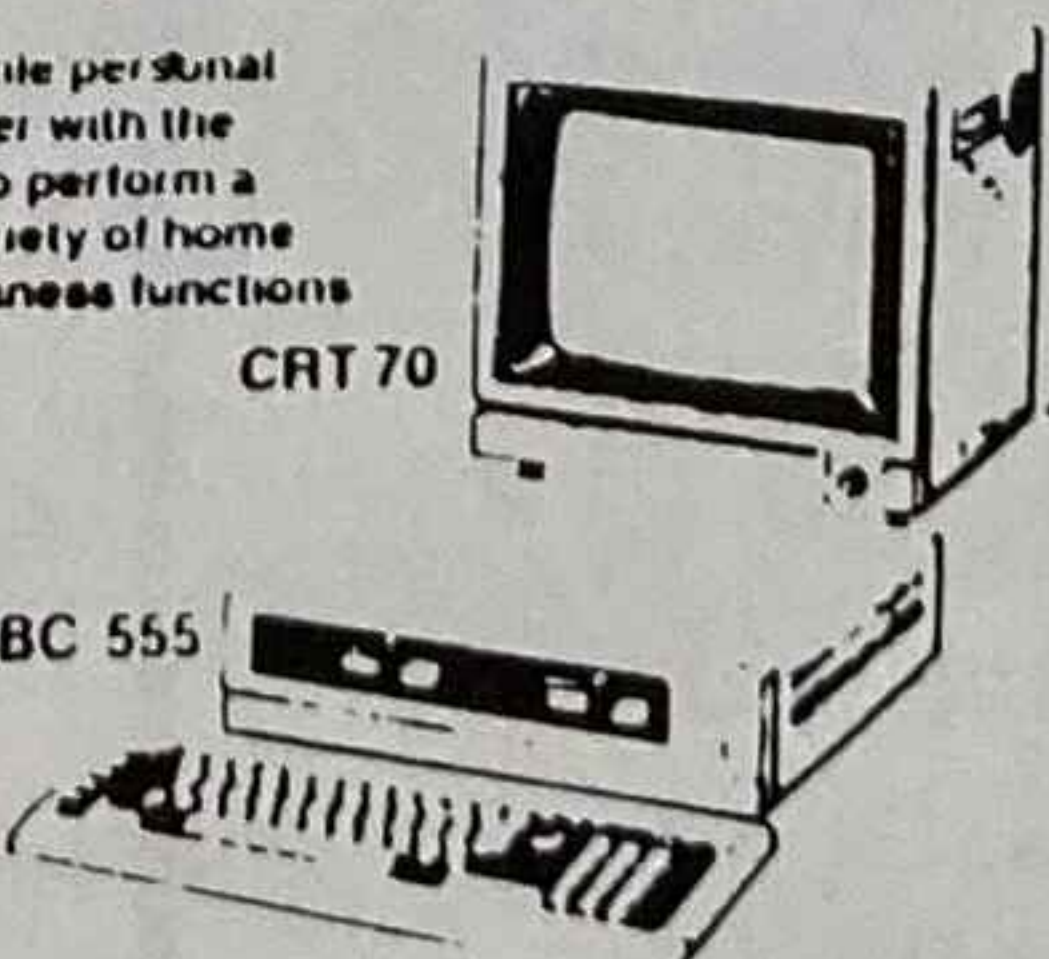
CRT 70

**MBC 555

- 16 bit 8088 CPU
- 128 KB RAM, expandable to 256 KB
- Two 160 KB mini floppy disk drives
- MS DOS operating system
- Detachable Keyboard
- Built in Color Graphics
- Interface for Centronics parallel printer
- 13" 8-color CRT monitor
- 640 x 200 dot graphic display
- 80 characters x 25 lines

MBC 555
Sugg. List
\$1,399.00

CRT 70
Sugg. List
\$749.00



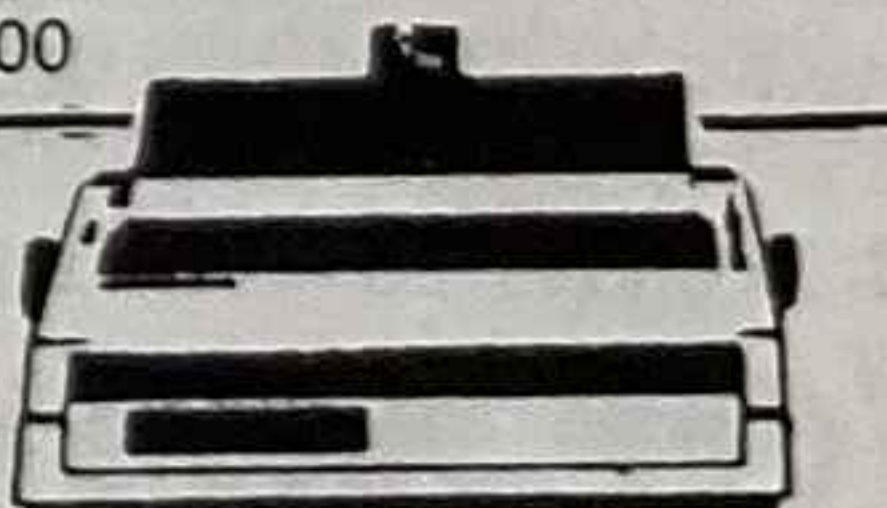
Affordable High-Performance Computer

A compact, integrated personal computer with a wide range of multipurpose applications

MBC 1150

- 8 bit Z-80A CPU
- 64 KB RAM
- Two 160KB mini floppy disk drives
- CP/M 2.2 operating system
- Easy to use Sanyo BASIC
- 12" green phosphor CRT monitor
- 80-character x 25 line display
- Detachable keyboard
- Interface for Centronics parallel printer and RS-232 C port
- Optional interface for hard disk or floppy disk drive

MBC 1150
Sugg. List
\$2,099.00



PR 5500
Affordable Letter Quality
Daisy Wheel Printer

Print	15-16 cps - bidirectional
Typing Pitch	10, 12, 15 characters per inch
Paper Width	17 inches (Max)
Line Spacing	48 positions per inch
Interface	Centronics Parallel Interface

Sugg. List
PR 5500 \$999.00

HAYES, PANASONIC, STAR MICRONICS, CLASSIC MEMORY, INNOVATIVE, ANCHOR



Picture-Puzzle — A Modern Version Of An Old Favorite

Have you ever wanted to make a quick printout of what you've already typed in, but didn't want to go through the trouble of saving the file and then going through the entire procedure to print a file? *My Word!* will let you print your file from inside the word processor itself. But there is a catch — you don't get any text formatting or anything like that. What you do is name the file *LPT1:* as you save it. *LPT1:* is the DOS device name for line printer (on the IBM PC), so you effectively "save" the file to the printer.

To make formatted printouts, press PF4 and the program will save your file and exit to DOS. From the DOS prompt you will type D:MWP where D: is the drive *My Word!* is in. A menu will come up allowing you to choose from:

- 1) Print a file
- 2) Merge print a file
- 3) Run MY WORD! (the word processing part)
- 4) Exit to DOS

Choose option '1' or you may press 'P' for print. Next, you are shown a directory of the current disk and asked for a filename to print. After you select your file, you will see another menu allowing you to pick which device the file will be printed on. You are allowed to choose from LPT1:, LPT2:, LPT3:, COM1:, COM2:, and the screen or a disk file. When I tried COM1: and COM2:, the program generated an error message saying "device not available," so you cannot send data over the RS-232 using a Sanyo and *My Word!*

After selecting which of the above devices you want to print to, you can select more than one. This allows you to print on the printer (LPT1: on the Sanyo) and to the screen at the same time, thus you can see what is currently being printed at any time. Also, you may choose to exit to DOS or return to the opening menu from here.

Next you will be asked a number of questions like *Word-Star* does, except *My Word!* allows you to select the number of copies you want to print from here and whether or not you want right justification or not. After the questions are answered, you may stop and start the print by pressing 'P' or stop the print and return to DOS by pressing 'X'.

My conclusion is that you cannot possibly go wrong with buying a copy of *My Word!* Running on the Sanyo, the error handling routine locks up after the second error, but this is not the program's fault. I've written BASIC programs that use error routines and they don't work after the second error, either. So I think the problem is with Sanyo's version of the BIOS and not *My Word!* The manual states that if you are the first to report a bug, they will send you a copy of the fixed version at no cost to you and also, that other users will be notified of the bug. If you have problems with *My Word!*, they suggest you call or write, but prefer a call since it's faster for them and you. I know most of you out there bought the 550/555 computer because it packs more power for the price than any other current computer. So if you're looking for a word processor with that same kind of power for price, try *My Word!* You may be surprised something so good can cost so little.

(T.N.T. Software, Inc., 34069 Hainesville Road, Round Lake, IL 60073, 312-223-8595, \$25, enhanced version \$35, PBASIC and MicroSoft BASIC source code \$25)

— Jeff Purcell

Remember when you were younger and you had small, hand-held puzzles? It was a square with letters or numbers in all but one space, which was left blank. The object of the game was to move the pieces into order by sliding them, one at a time, until the puzzle was done. Well, that is what *Picture-Puzzle* does, but there is a twist.

The twist in *Picture-Puzzle* is that you can tell the computer what picture and how many pieces you want in your puzzle. When entering the number of pieces in your puzzle you can choose from three to eight pieces per side. What this means is that each side of the puzzle is divided into the number you choose: if you choose three, then the puzzle will have nine pieces in all ($3 \times 3 = 9$), and if you choose eight, then there will be 64 ($8 \times 8 = 64$). So the maximum number of pieces you can have is 64.

After you choose the number of pieces, the puzzle is cut up into that number of squares and the bottom right square is taken out. This is done so that you have a space to move the

FANTASTIC INTRODUCTORY PRICES

ON TWO NEW PROGRAMS FROM SOFTSOL
DESIGNED FOR THE SANYO MBC-55X

DRAW
-N-
DOODLE

A GRAPHICS DESIGN program which is limited only by your imagination. Uses single keystroke entry for FAST design work. Save design to disk, and use your graphics dump program for a printed copy. Also supports a JOYSTICK. Compare our prices against any similar program and you will see, we are your Software value leader.
REQUIREMENTS: SANYO MBC-550/555, 256 K Memory, Color or Monochrome Monitor, and imagination.
OPTION: Joystick
INTRODUCTORY PRICE: \$ 15.95 + \$ 2.00 P & H

OTC
STOCK
EXCHANGE

You, and up to 5 other tycoons will be launched into the realm of fast paced stock trading, you will manipulate 9 selected stocks or (for the conservative investor) Treasury Bills. As you buy and sell, watch your portfolio increase in size and value, or look for the nearest window. With graphics, Wall Street headlines, and screen dump to printer. Two programs on disk for Color or Monochrome Monitor.
INTRODUCTORY PRICE: \$ 15.95 + \$ 2.00 P & H

FOR THIS AD ONLY / BUY BOTH PROGRAMS FOR \$ 29.95 + \$ 2.00 P & H
(A SAVINGS OF \$ 3.95 OVER OUR ALREADY LOW INTRODUCTORY PRICE)

FOR TELEPHONE ORDERS USE VISA / MASTERCARD -OR- SEND ORDERS TO:



(702) 452-0989
P.O. Box 42096
Las Vegas, NV 89116-0096

with SOFTWARE SOLUTIONS for the Sanyo MBC-550 / 555

NEVADA RESIDENTS PLEASE ADD 5 3/4 % SALES TAX
Money Orders - SHIPPED NEXT DAY -- Checks require 2 weeks.

other squares into when you start to solve the puzzle. The next thing that you are asked is what difficulty level you would like. There is a choice of one through nine; the least difficult is one and the most difficult is nine. It is best to start at the lower levels, as I will show you later.

If you get into a game and then decide it is too hard to finish, there is a solution: let the computer do the puzzle for you. That's right! If you want to see the computer solve the puzzle, it will start at the beginning and do the whole puzzle for you while showing you the moves as it solves the puzzle.

In the instruction book that comes with the game there is a chart that shows you how many moves it takes the computer to do the puzzles. Bear in mind that the computer does not make many mistakes, so it will probably take you a few more moves than the computer on the higher levels.

	DIFFICULTY LEVEL								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
P (3 x 3)= 4	11	18	25	33	40	48	56	64	
U									
Z (4 x 4)=10	22	36	50	64	78	93	108	123	
Z									
L (5 x 5)=17	39	61	85	109	133	158	184	209	
E									
(6 x 6)=28	62	97	134	172	210	249	289	329	
S									
I (7 x 7)=43	93	146	201	258	315	374	433	493	
Z									
E (8 x 8)=63	136	213	293	374	458	543	629	716	

So, as you can see, if you choose size eight and difficulty level nine, you would probably be in for more than 716 moves, and that is a lot of moves.

When the computer has mixed up the puzzle and you are

ready to start, you use the arrow keys to move the pieces. If you want to move one of the squares down, you press the down arrow, or the five key on the numeric keypad. You use the other arrow keys the same way. Any time you want to take a look at the finished puzzle, or the way it looked when you started, all you have to do is press the diagonal arrow key, or the seven on the numeric keypad. There is also a panic button which will let the computer solve the puzzle for you. To hit the panic button, you press the ESC key in the upper left-hand corner of the keyboard.

One especially nice thing about the game *Picture-Puzzle* is that not only are you given three pictures to use as puzzles, but you can make your own. If you have *Easy-Draw*, the graphics program that was reviewed in the first issue of this magazine, you can draw your own pictures and then make them into puzzles. With this feature you will never get tired of the game, because it will be a different puzzle every time.

There is only one feature that I feel could be improved on, and that is when you want the computer to solve the puzzle, it starts from the beginning. I would have liked the computer to start where I stopped. In this way, I could easily see what I could have done and not what I should have done. This is just a minor imperfection, and I would recommend this game to anyone who enjoys puzzles — any kind of puzzles. I also would recommend that you get the *Easy-Draw* program to get the most out of the *Picture Puzzle* game.

(Migraph Software, 33125 15th Avenue South [B-121], Federal Way, WA 98003, 206-839-6811, \$39.95, requires 256K)

— Pat Brestel



FREE DOW JONES NEWS/RETRIEVAL® SUBSCRIPTION

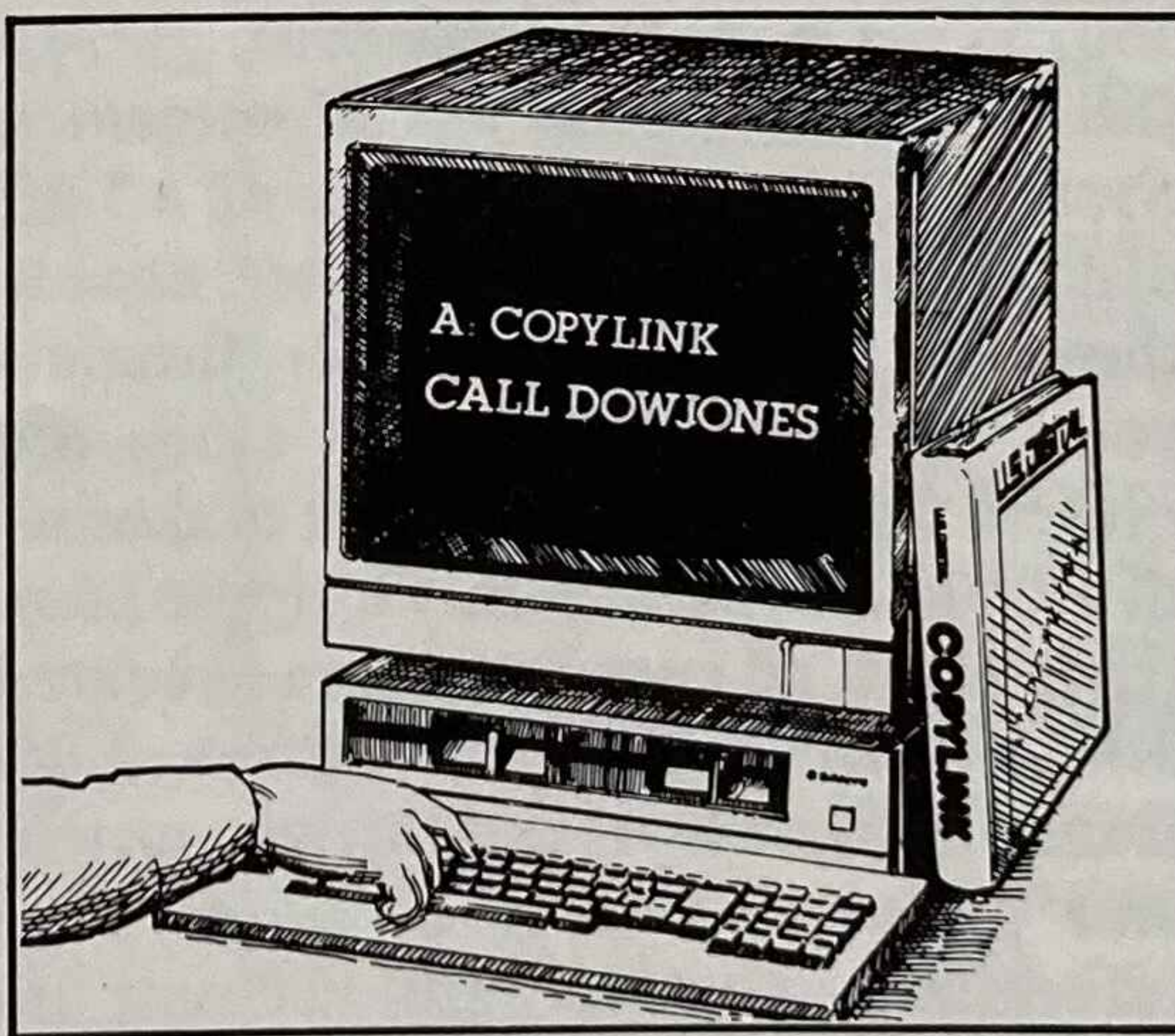
\$125 Value with COPYLINK

COPYLINK makes the Sanyo PC a powerful and intelligent communications device — for less than the price of a DEC or IBM "dumb" terminal! Now with every Copylink comes a free subscription to Dow Jones News/Retrieval, the most popular public database in the world. Included is a password (worth \$75) and one hour of free time for a total value of \$125!

Dow Jones offers the premier service for business people, but it's also for students, travelers, and shoppers — with the 20-volume American Academic Encyclopedia, the Official Airlines Guide, Comp-U-Store, an electronic super-market with great discounts on over 60,000 items, and access to the electronic MCI Mail network at no extra charge. A free Intro service is available every time you logon to inform you of new services and provide tips on how best to use DJN/R.

"The Strongest Link"

By itself COPYLINK is the finest communications program for the Sanyo. Dubbed "The Strongest Link" by Microcomputing Magazine, an October 1984 review says it all: "Copylink is one of the most powerful data communications packages available at any price. The fact that it can be purchased for less than \$100 makes it the best communications value on the market today..."



Friendly flexibility

It's easy to selectively download information to your disk. And COPYLINK offers HELP at every level of the program. For most uses, you only have to remember the "CALL" command and the name you want to call. Let COPYLINK look up and dial the number from an unlimited directory. In fact, you can make it do everything automatically — logon, read a file onto your disk, transmit a message, and logoff. It will even save that file and hangup the phone for you, should you happen to forget — sparing duplication of effort and gigantic phone bills.

U.S. DIGITAL™

Extraordinary support

U.S. Digital receives lots of feedback like this note: "Dear Sirs, Copylink version 2.41 works great. I have encountered no bugs at all. Thanks for all your phone help. It is a pleasure to deal with a software company that cares about their product and is so willing to help the end user." — Peter Silberman, Dallas.

Ready to run

For all versions of MBC 550/555, MBC 1150 & 1250. COPYLINK is compatible with almost all 103, 212A, and Hayes compatible modems. It comes with a comprehensive User's Manual in an attractive binder.

CP/M for the MBC 550/555

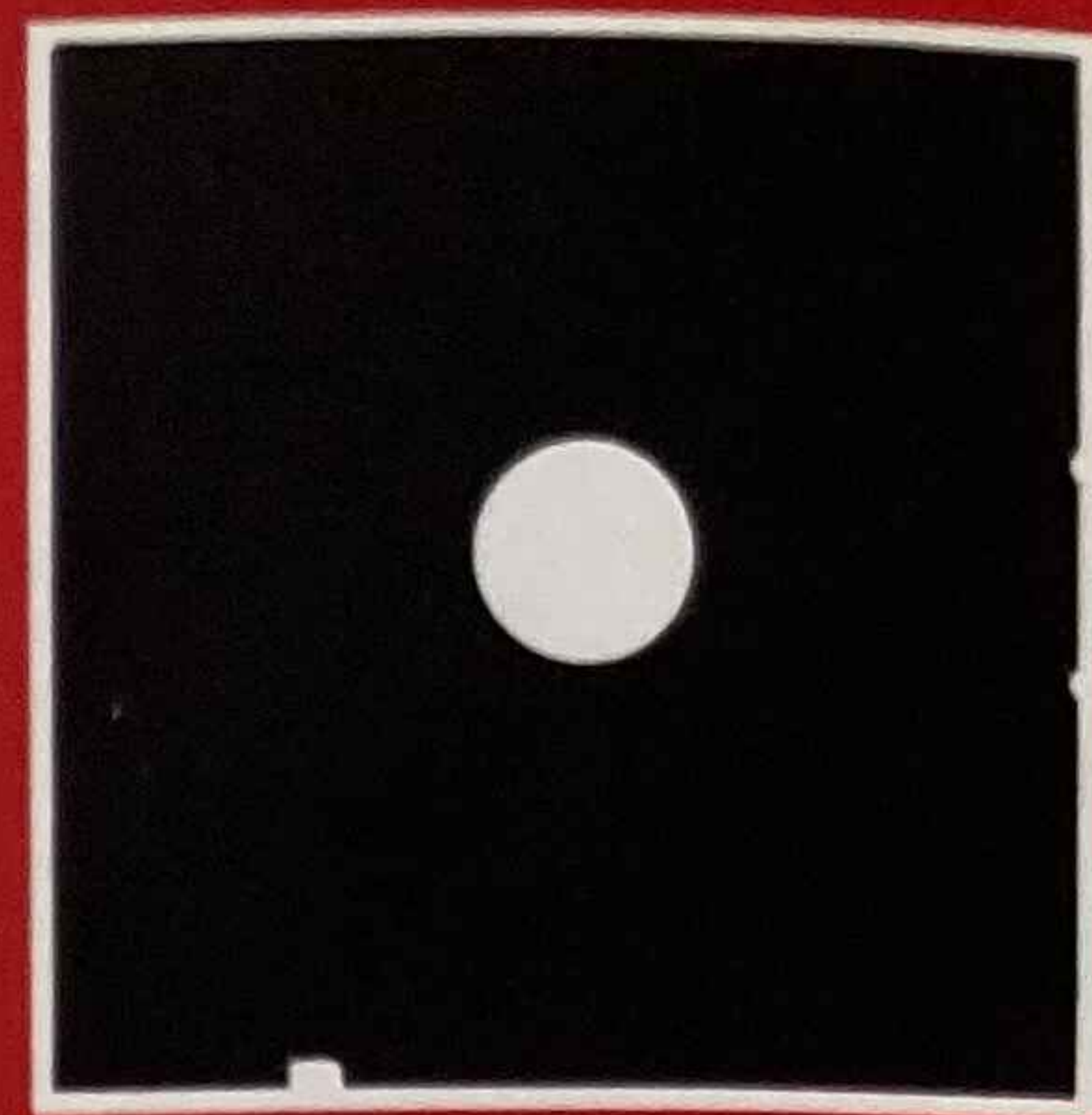
Save those CP/M programs you've invested in! CPeMulator™ makes the Sanyo PC a CP/M-80 machine — without the addition of any hardware. CPeMulator is actually an MSDOS program that makes it possible to run your favorite CP/M programs by simulating a full-fledged 64K CP/M 2.2 operating system. It works like a charm!

Easygoing prices

Single Format Package \$ 99.95
Dual Format Package (for file transfers from other PC's) \$129.95
CPeMulator \$ 99.95

Call now to have COPYLINK delivered to you within two working days, or tell your dealer you insist on COPYLINK.

SOFT TALK



WE ARE INFORMED that *Copylink*, by U.S. Digital (reviewed in this issue, Page 57), has some recent enhancements: VT-100 compatibility has been enhanced by allowing the user to program up to 16 function keys, therefore enabling VT-100 cursor control codes to be generated with the cursor control keys; the program now starts up directly with a call request and displays a prompt requesting the name or number to dial; the status line display can be toggled on or off; the phone directory has been upgraded so that parameters can be automatically reconfigured by a directory call; an "auto-command" function has been added which allows the program to run a preset series of commands, such as for delayed calling or unattended data transfers; and finally, a free password to Dow Jones News/Retrieval and one free hour of online time is now bundled with the *Copylink* package.

For more information, contact U.S. Digital, 5687-H, S.E. International Way, Portland, OR 97222; (503) 654-0668.

* * *

FURTHER INFORMATION comes from Michigan Software, who would like it to be known that all of their software now runs on both MS-DOS 1.25 and 2.11, including their *Capitals and States* geography program. Michigan Software can be contacted at 43345 Grand River, Novi, MI 48050; (313) 348-4477.

* * *

TRIAL BY FIRE. The *Sanyo Communications Pack*, a stand-alone serial communications program, has been introduced for the MBC-500 series of

computers. *SCP* features a range of terminal configuration options, file transfer capabilities, Hayes-compatible automatic dialing, the ability to execute MS-DOS commands and return to the program (Ver. 2.11) and all functions are invoked from menus called by the 10 PF keys.

A demonstration version of the *Sanyo Communications Pack* is available to Sanyo users' groups for trial by the members. The demo package does not have file handling capabilities; the version that does is available for \$50.

For more information, contact John Birchfield, 411 Crane Ave., Turlock, CA 95380; (209) 634-6243.

* * *

FINANCIAL MANAGEMENT on the 550/555 is now available with *PFMS*, the *Personal Financial Management System*. This package, requiring a 320K disk drive and an 80 cpl printer, enables the user to understand his financial goals, money management skills and present financial situation. It makes use of all 10 PF keys, has only a single menu from which all commands are executed, allows the storage of up to 2,800 transactions on a dual-drive system, and permits the storage of personal information such as bank account and credit card numbers, as well as the financial transactions.

PFMS is produced by Roxcel Software International Ltd. and is currently available for \$99 from Compusoft, P.O. Box 11659, Edmonton, Alberta, Canada T5J 3K8; (403) 423-1175.

* * *

INTELLICOM VER. 2.07, a new version of the communications program by The Computer Toolbox, has just

been released for machines operating under MS-DOS 2.00 or higher. Some of the enhancements include a maximum 4,800 Baud rate, real terminal emulation (including VT52, VT100, ADM3A and Televideo 910), help messages on the disk, a utility for creating phone directories and another utility for creating batch files to customize the program for any particular configuration. Computer Toolbox claims to have reached "a high degree of flexibility even for the most sophisticated user while retaining a friendliness the novice will appreciate."

This new version of *Intellicom* is available for \$69.95 directly from The Computer Toolbox, 1325 East Main Street, Waterbury, CT 06705; (203) 754-4197. Previous purchasers of *Intellicom* may update their version by returning their original disk with a check for \$15.

* * *

ORDER AMONG THE FLOPPIES.

The *Disk Catalog System*, from Palm Bay Software, offers a means of bringing order to the chaos of your disk collection. *DCS* provides the user with the capability to store disk directories in two databases for access by both filename and filename within volume name. Provisions exist to add, replace or delete specific disk volumes, display or print the databases in either file or volume sequence and display or print a disk summary report. Also, labels may be printed for attaching to the disks or jackets.

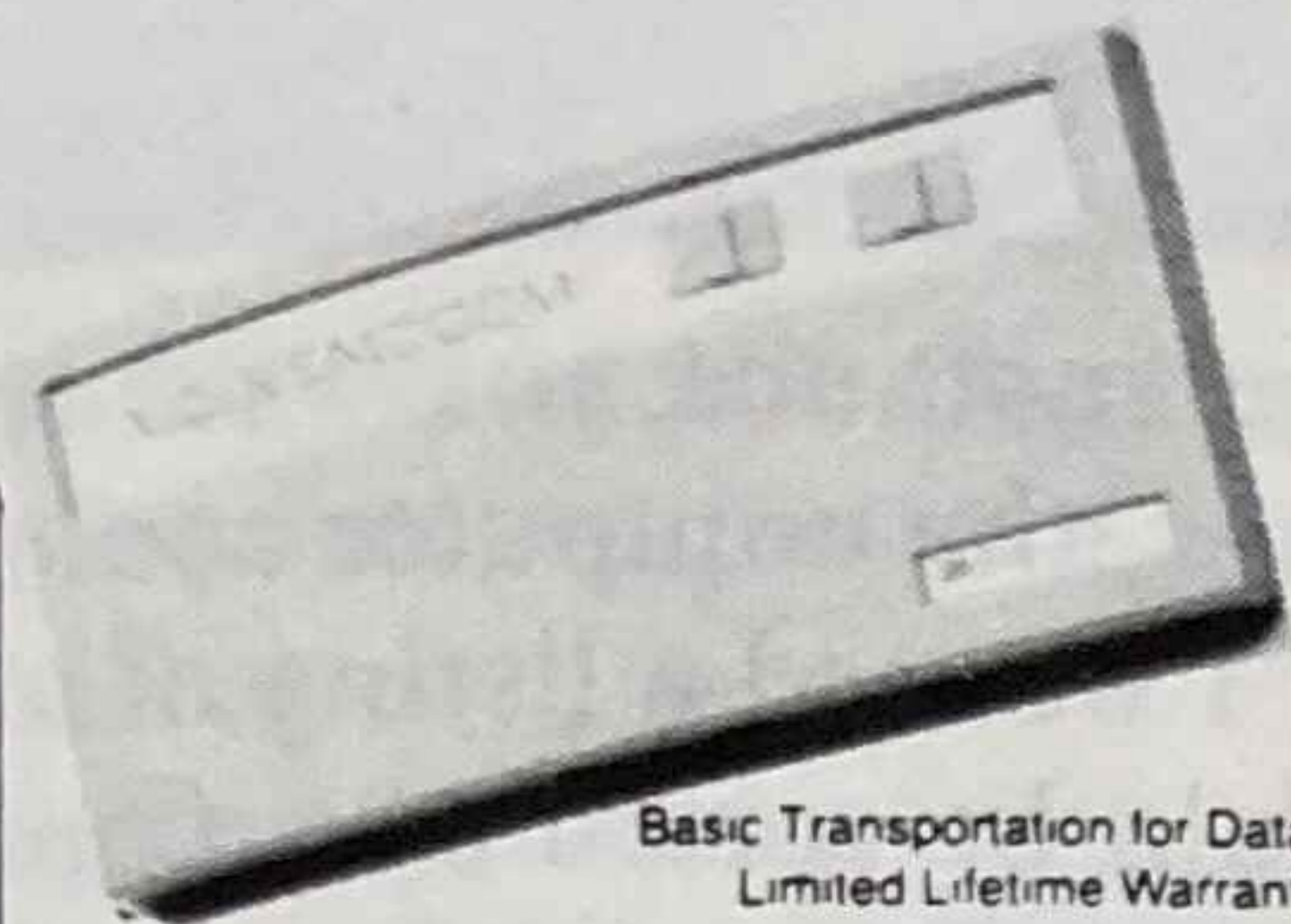
The *Disk Catalog System* is now available for \$39.95, plus \$3 S/H directly from Palm Bay Software, P.O. Box 61625, Palm Bay, FL 32906; (305) 727-6368.

Continued on Page 76



TEX⁺COMPTM

AUTHORIZED DEALER
ANCHOR AUTOMATION,
World's Leading Modem Manufacturer



Basic Transportation for Data
Limited Lifetime Warranty

America's Number One SANYO dealer.

Proudly Introduces The
VOLKSMODEM
The Complete Low-Cost Plug-In Modem.
It puts computer-to-computer communications within easy reach of every personal computer owner.

Sanyo
MBC 550

AUTHORIZED DEALER

Just plug VolksmodemTM between any wall phone jack and telephone and put your computer into instant communication with thousands of others. It's that easy. No extra parts or tools are necessary—just one adapter cable and software is all that's needed. Completely portable, Volksmodem transmits both voice and data over all common telephone lines, automatically changes from Originate to Answer and back again when you're in the data mode, and uses a low-cost 9V battery or optional plug-in adapter. With personal computer productivity.

Volksmodem Features

Direct connection for RS-232C type interface
Bell 103 compatible
Built-in interface cable and connector
Internal 9V battery
Audible carrier detect signal
Full/half duplex switch
0-300 baud
Data/voice switch
Automatic originate/answer mode selection

Specifications

Data Format: Serial, binary, asynchronous
Operate Mode: Manual dial, Automatic, ANSWER/ORG selection
Data Rate: 0-300 bps, full/half duplex
Modulation: Frequency shift keyed (FSK)
Line Interface: Direct connect to wall outlet
Data Interface: RS-232C compatible via selected cables
Transmit Frequency:
Mark Orig 1270 Hz, Answ 2225 Hz
Space Orig 1070 Hz, Answ 2025 Hz
Transmit Frequency Accuracy: $\pm 0.01\%$
Transmit Level: -12 dBm typical
Receive Frequency:
Mark Orig 2225 Hz, Answ 1270 Hz
Space Orig 2025 Hz, Answ 1070 Hz
Receive Frequency Tolerance: $\pm 0.5\%$
Carrier Detect Threshold: -44 dBm typical
Carrier Detect Indicator: Audible Tone
Power Requirement: Internal 9V transistor battery
Size: 8" x 4" x 1 1/4"

Battery not included

\$59.95
PLUS
CABLE

IN STOCK - IMMEDIATE DELIVERY

Includes shipping & insurance
—plus—
FREE Source Sign-On
(a \$100 + value)

SPECIAL: VOLKSMODEM CABLE FOR SANYO PC (with RS232 interface) only \$8.95 when ordered with Volksmodem (reg \$12.95)

SPECIAL OFFER:

MARK XII 300/1200 Intelligent Modem

HAYES SMARTMODEM² COMMAND STRUCTURE

■ 300/1200 BAUD ■ BELL 103 & 212 A COMPATIBLE ■ AUTO ANSWER/AUTO DIAL
■ AUTOMATIC SPEED MODE SELECTION ■ CABLE INCLUDED (18") ■ 2 YEAR WARRANTY
■ RS 232 C COMPATIBLE ■ ENHANCED NOISE IMMUNITY (Communication Software Not Included)

\$259.95 Postpaid

(FREE Source Sign-On With Purchase)



SPECIAL: SANYO RS232 INTERFACE (REQUIRED WITH ANY MODEM)\$79.95 POSTPAID



"YOUR HEAD IS DIRTY!"

Smoke in the air, dust on work surfaces, along with fingerprints and other contaminants can destroy your valuable software. Now the leading cause of data loss can be controlled quickly and easily with HEAD Diskette Cleaning Kits. Apply a few drops of HEAD cleaning solution on one of the cleaning disks included with your kit and in 30 seconds your disk heads are clean. It's that simple! Works with all single and dual drives.

Protect your valuable investment.
\$34.95 list

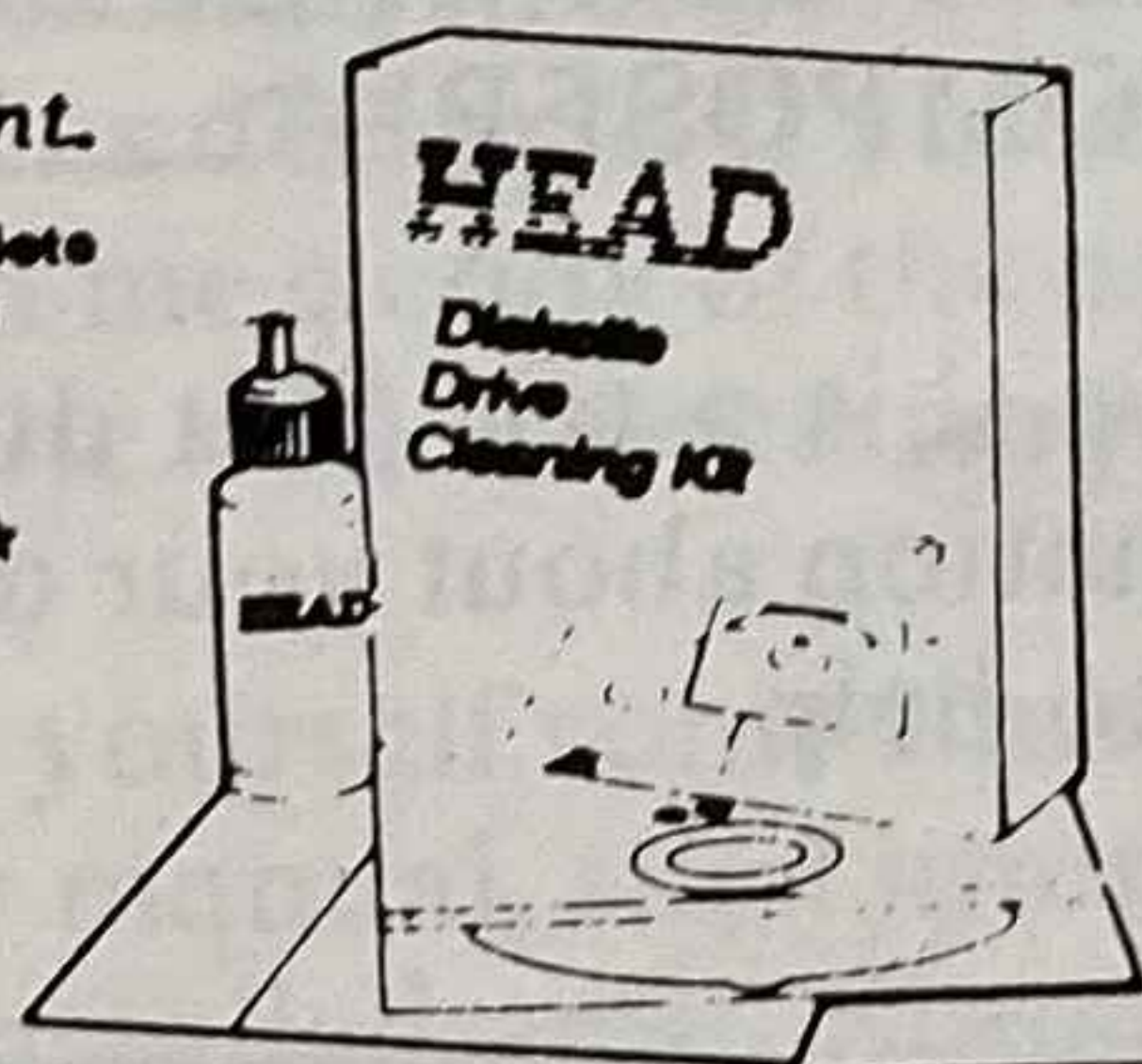
\$15.95

Complete Kit

FREE SHIPPING ★

2-5/4" cleaning diskettes
1-4 oz. bottle cleaning solution

1-Dispensing spout
HEAD COMPUTER PRODUCTS
When you MUST have clean heads



Flip 'N' FileTM For 5 1/4" Mini Disks
Keep diskettes safe and organized

Index Dividers provide easy retrieval—adjustable tabs can be set to desired positions. Dust Free Protection Flip 'N' File are self contained storage units with hinged lids which, when closed, protect your disks from dust that can lead to loss of important information. Storage Capacity each unit has a storage capacity of 50-80 disks. The unique lid design provides for easy access and also doubles as a carrying handle.

\$19.95

POSTPAID

See-through lid flips up for instant access — stays securely closed in transit.

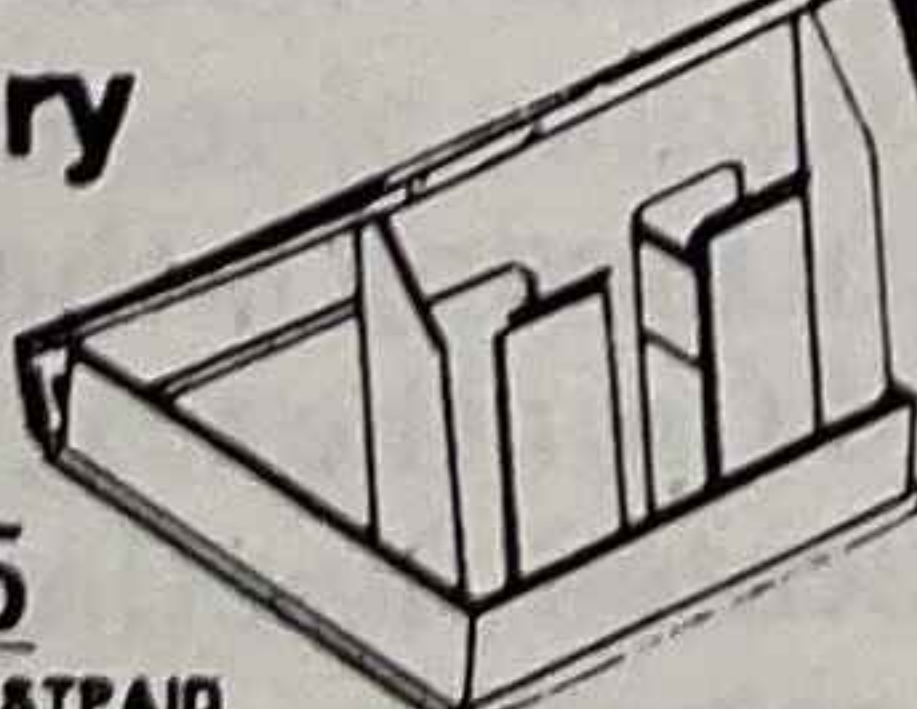
5 1/4" Library Case

10 FOR \$19.95

POSTPAID

Stores and protects flexible discs. Enclosed easel displays discs for easy retrieval. Manufactured from high-impact polystyrene.

Each holds up to ten diskettes.



GREAT DISKETTES
Super low prices
LIFETIME WARRANTY!

5 1/4" 5500 5 1/4" 0800

\$185 \$235

Qty 20, Qty 20 including postage

The low priced, high quality diskette with a LIFETIME WARRANTY. Packed in polybags of 10 with Tyvek envelopes. Labels and reinforced hubs. One of the best buys we've seen.

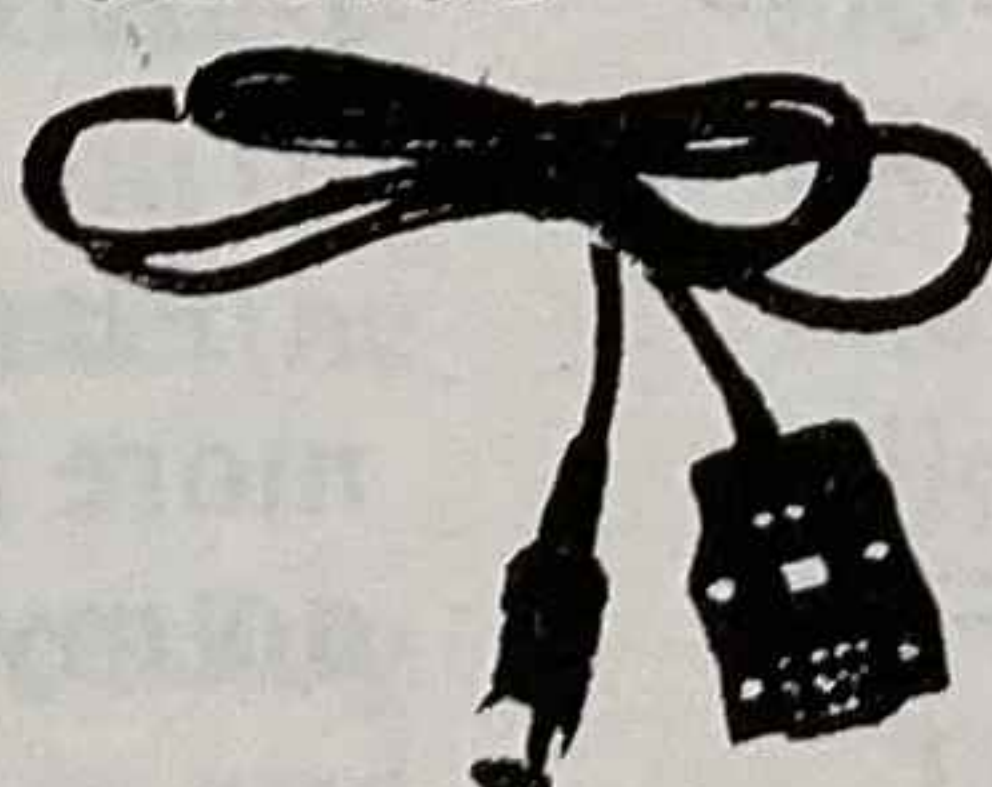
Fast service by mail...or phone

SANYO TYPE RGB MONITOR CABLE

FOR SANYO MBC-550,555.

TO BE USED WITH MOST RGB MONITORS USING 8 PIN CONNECTOR

\$23.95 POSTPAID



Before you plug-in your computer, you'd better consider how you are going to insure or protect your investment from *unwanted electrical pollution*.

LINEGARD[®] protects against damaging voltage spikes which can degrade or destroy the internal components of your solid state equipment. Acts as a "shock absorber" without interfering with normal current flow! Just plug it into any 15A, 125 VAC outlet,

Spike Protection

Model LG-10

- Wall plug-in unit
- 6 "U" ground outlets
- Indicator light
- Internal overload protection

\$19.95

FREE SHIPPING



SANYO COMMUNICATIONS SOFTWARE
BY MICHTRON. SUPPORTS 300/1200 BAUD
MI-TERM only ..\$59.95 with modem purchase!

SEND ORDER AND MAKE CHECKS PAYABLE TO:

TEX⁺COMPTM

P.O. BOX 33084 — GRANADA HILLS, CA 91344

TERMS: All prices FOB Los Angeles. For fastest service use cashiers check or money order. Personal checks take at least ten days to clear. Add 3% shipping and handling (\$3.00 minimum). East of Mississippi 4 1/2%. (Free shipping on all software orders over \$100 and on postpaid specials). Add 6 1/2% S.T. for delivery in California. Prices and availability subject to change without notice. We reserve the right to limit quantities.



VISA and MASTERCARD
HOLDERS CALL DIRECT:
(818) 993-5606

Credit Cards add 3%



BUSINESS SECTOR

By Charlotte & Brian Stone
Soft Sector Contributing Editors

This is the first installment of "Business Sector," a question and answer column dealing with applications programs which will appear in each issue of **SOFT SECTOR**. The four previous columns (by Charlotte and Brian) were used to show you how to install some of the more popular printers that are available, how to make the most of an RGB color monitor with *WordStar*, and how to take advantage of *InfoStar* for mailing labels.

All questions sent to **SOFT SECTOR** will be answered. As many as possible will be answered in this column for the benefit of all of our readers. If your complete name and address is included, we will also send an answer directly to you so that you don't have to wait six to eight weeks for an answer to be published.

Q. I have a large collection of records and tapes, as well as a couple drawers full of sheet music and music books. I want to inventory all the songs by title, composers, subject, and where to locate them in my library. Some songs appear on more than one record and in more than one music book.

I want to be able to retrieve this information by song title,

The authors, Charlotte and Brian Stone, have been involved with computers since their purchase of the original Radio Shack Model I in July of 1978. Since April 1984, Charlotte has been using the Sanyo in her daily work routine as office manager for a Detroit firm. Brian has been using a variety of Sanyos since May of 1983. Of the five computer systems they presently own, two are Sanyos.

by composer, or by subject. For instance, if I want to put together a medley of "rain" songs, the computer could sort the song titles by subject. Or, if I wanted a listing of all the songs by Irving Berlin, they would be sorted by composer.

Using *FormGen*, *DataStar*, *FormSort*, and *ReportStar*, I have almost got what I want. The result, however, is a listing of all the song titles by all the composers in the file. How do I isolate the one composer I want and get a report listing only his songs?

Gilla Bachellerie
Renton, WA

A. You can isolate one composer for your report using the "Include If" option in the file description portion of *Redit*. This is the very last question asked for each file description. The prompt reads: "Enter the condition(s) for record inclusion: INCLUDE IF." The wording of these "Include If" statements can be a little tricky and can result in an error message if done incorrectly.

For your purpose, I believe the correct wording would be:

INCLUDE IF \$COMPOSER="_____"

The '\$' means that the computer will be doing a string comparison of the contents of your "Composer" field with the composer's name which you would type in between the quotation marks where I have put a blank line. If you did not name the field, use \$001 or whatever the correct number or name of the field in your report is.

If you should need a listing of two composers' songs, the wording would be:

INCLUDE IF \$COMPOSER="_____"
.AND.\$COMPOSER="_____".

Please give this a try. If it doesn't work, please send me more information about your datafile and report and I will do my best to help.

Q. When I list (to the screen) a file written with *WordStar* using the *TYPE* command, the file does not appear as it was written. There are, in addition to whatever text remains, meaningless symbols.

Hardy M. Cook
College Park, MD

A. The difficulty that you are having is that *WordStar* sets the eighth data bit of the word (*not* the text word) so that it can perform all of its sophisticated functions.

There is no easy way of removing this situation from existing files. But anytime you create a new file, you can use the non-document mode. You would do this by opening the file from the main menu by pressing 'N' rather than 'D', then entering the file name. This will create the file without the

eight bit being set. The bad part of this is that you will lose 10 of the most important formatting and editing functions of *WordStar*.

The 'N' function of *WordStar* is used for the entry of data, for programs like *ReportStar*, *DataStar* and *CalcStar* type programs plus the creation of programs that can be executed under BASIC.

The only way to change any existing files would be to write your own utility which is capable of stripping the eighth bit or purchase one to do so.

If you do not already own the *WordStar* reference manual, I suggest that you order one from the dealer where you purchased your MBC-550/555. Section 10 of the manual will be helpful in this instance.

Q. I liked your article on *WordStar* and setting up a printer even though it didn't help me with my problem. I received *WordStar* already set up for my computer. But I cannot access certain printer functions due to not being able to change the commands sent to the printer. I have a Panasonic KXP-1090 dot-matrix printer and would like to use superscript, subscript and variable line spacing, but the computer does not send the proper commands to use those features. Any ideas?

John Hornung
Republic, MO

A. I have had the opportunity to work with the Panasonic KXP-1090 dot-matrix printer and it is an excellent machine. What you will have to do is substitute the appropriate codes found in the Panasonic manual for the codes shown in the August '84 article "Your Printer Can Shine With *WordStar*" (Page 55). The Panasonic manual shows this information in both the Hex format as well as decimal. If you are unsuccessful in doing this, please send me a copy of the pages from the manual and I will return the codes necessary to make the printer do what you want.

I think that you can save yourself some time by rereading the article and your printer manual, then jump right in and do it. The printer can be installed as a "Standard Printer" from the menu of printers, choice 'C'. Then you must select 'D' from the menu and do the custom installation with the information from the Panasonic manual and the SOFT SECTOR article starting at the "stap" on Page 57. If this is followed through, I am sure you will get the desired results.

Also, you might try installing *WordStar* by selecting Epson MX-80/100, 'I' from the standard printer types, as I believe the Panasonic emulates an Epson.

Q. Can you tell me how to change the *WordStar* labels that appear on my screen. Sanyo's manual is clear on how to change the operation of the function keys in *WordStar*, but no instructions exist as to how to change the labels.

Daniel Prosser
Normal, IL

A. There is no easy way for you to be able to change the labels that reflect the function key uses. To do this will require actually getting into the *WS.COM* file and making changes with a *DEBUG*-type utility. This is a project that will require a little work and take quite a bit of time, as the location of the changes are not documented for end users.

Editor's Note: Tim Purves explained the process of using *DEBUG* to accomplish this in his "Input/Output" column, Page 20 of the November issue of SOFT SECTOR.

Q. If the word "editor" [in the enclosed samples] does not appear in italics in this letter, it is the only thing that didn't work just as your article, "Your Printer Can Shine With *WordStar*" [August '84, Page 55] said it would. My printer is a Mannesmann Tally Spirit-80. The print test shows italics. Also, I would like to print more than one line in double-wide characters and the printer goes back to normal size after every line unless I insert the code for double-wide over again.

Bob Barrett
Lemon Grove, CA

A. I am sorry for the problem that you are having. The difficulty is not what you have done, but what I told you to do. There is a small error in the article that I did not see prior to publication. If you installed all of the other features — as you seem to have done — and they work correctly, then the only thing you have to do is the following. The control sequence you are using is in error.

The control sequence to shift to italics is ^PA (^ indicates the CTRL key), not ^PN as indicated in the article. The control sequence to shift back to normal characters is ^PN. The correct way to use italics in your text would be as follows:

This is standard text, ^PA This is italics. ^PN This is standard again.

The way to get continuous double-wide characters from your Spirit-80 will be to change the code sequence sent from ^PQ. At this time you are sending the Hex character OE. What you will need to send is a two-code sequence of Hex 1B and 57. This will force the printer into double-wide until it receives the code to turn it off (^PW).

Please refer to the original article and install this new code sequence in the same manner that you installed italics.

I am not sure what *WordStar* will do in all circumstances, because it might mess up occasionally with the way it tries to justify at times. The best way to find out will be to make a separate copy and install the new codes and find out. You might not be able to use a justified right margin, because *WordStar* will think it is printing an 80 character line and the printer is printing 40 characters per line.

Q. One question you might be able to clear up for me: I've used *InfoStar* to create a catalog of my collection of about 250 records and about 75 90-minute tapes. I enter records and tapes in separate data files using the same form (but different names), keyed only on the numerical number of the record or tape. That's all fine for data entry, but for searches and printouts, I want both records and tapes in one data file sorted first by composer and then by the title of the work.

So, I use *WordStar* to read my record and tape data files into a "music" data file. And I use the same form (with appropriate renaming), but with "composer" as my first key field and "title" as the second. I then use *FormSort* to sort my music file (I used to just use *FormSort* to sort the record and tape data files into a new music data file, based on the proper form, but eventually, as the amount of data grew, the 160K drives wouldn't support it, or at least I couldn't figure out how to make the sort work). The result is a music data file of about 90K and an index file which, together with the tiny form file, almost fills a 160K disk.

So far, so good. No error messages and no apparent problem. But when I try to use *DataStar* to access the data, and after I've keyed in the appropriate drive (B:) for the data and index files, I get a "read/write" error message for drive B:.

I've overcome the problem by simply replacing the large index file with a small dummy index file. When I do so, I can access anything I want in the data file. But I can't for the life of me figure out why it works. What is going on?

Paul Slocomb
Chicago, IL

A. The read/write error message you are getting has got to be caused by the fact that your data disk is almost full. I have not been able to determine why you don't get a disk full error message instead.

If by using a dummy index file you are able to access your data file, I assume you are either scanning in data order ('D' on the menu) or using the edit scan mask ('M' on the menu). These scans should work without an index. Scanning in index order ('I' on the menu) and selecting by key ('K' on the menu) needs a complete index to function.

Try moving your complete index file to the disk in drive A:. That should give you access to all the scanning functions of *DataStar*. You are at the point where you need to consider dividing your data file into volumes by some common criteria, either numeric, alphabetic, or some other type of category.

The reason you had to stop using *FormSoft* to merge your records and tapes data files is that *FormSoft* uses disk space to sort files. The space required is 2.75 times the size of the data files to be sorted. Therefore, a merge sort requires twice the capacity of a sort because you need room for both the source data files and the destination data file, as well as sorting space.

Q. Are there any integrated software packages like *Framework* from Ashton-Tate, or *Aura* by Softrend, that can be run on the Sanyo MBC-550 series of computers?

Diego Duque
Miami, FL

A. At the present time there are no products that we are aware of which are similar to *Framework* or *Aura* that will run on the Sanyo MBC-550 series. If this situation changes and products of this type do become available, I am sure that the manufacturers will be advertising them in *SOFT SECTOR*, as this will be a direct line to their largest audience.

Q. Can you please tell me how to use *SpellStar* with files created using *EasyWriter I* and *EasyWriter II*.

Ricardo Bendana
Miami, FL

A. There is no way to be able to use *SpellStar* directly with files created with *EasyWriter I* or *II* because the files created by these programs are not compatible with MicroPro products.

There is a way which may work and that is listed in the *EasyWriter II* manual as follows:

Export a Document (Selection 6), Pages 6-20 through 6-22 and

Import a Document (Selection 5), Pages 6-18 through 6-20

Export the file to a data disk, then run *SpellStar* from *WordStar* on the file, go back to *EasyWriter* and "Import" your file back into the *EasyWriter* format.

The best thing to do would be to learn and use *WordStar* if you are going to need the capabilities of *SpellStar*.



NANCY'S DISCOUNT

SANYO 550-2 W/SOFTWARE	700
SANYO 555-2 W/SOFTWARE	1000
SANYO LOTUS BOARD AS RELEASED	200
BY SANYO	

TEAC DS/DD DRIVE 360K/720K	160/190
128K RAM 150 ns	100
JUKI 6100 10-12-15 PS 2K BUFFER	400
BROTHER HR-15 10-12-15-PS 3K BUFFER	350
BROTHER HR-25/HR-35	600/825
BROTHER HR-5 THERMAL DOT MATRIX	180
OLYMPIA COMPACT 2 PAR/TYPEWRITER	400
OLYMPIA R/O OR TTX W/TF SERIAL & PAR 10-12-15	350
DIABLO 630 API 40CPS	1600
BMC 401 MFG SILVER REED (550)/SANYO PR 5500	440
OKIDATA 92P/IBM92	390/390
OKIDATA 82A/83A	290/535
OKIDATA 93P/IBM93	600/600
OKIDATA 84P/IBM84	700/700
BMC-CP LEDGEND-COMPACT (SQUARE DOT 80 CPS)	230

Send \$75.00 deposit and we will ship COD UPS actual charges

Cash prices only No credit cards honored

Prices are higher for in-store delivery & support

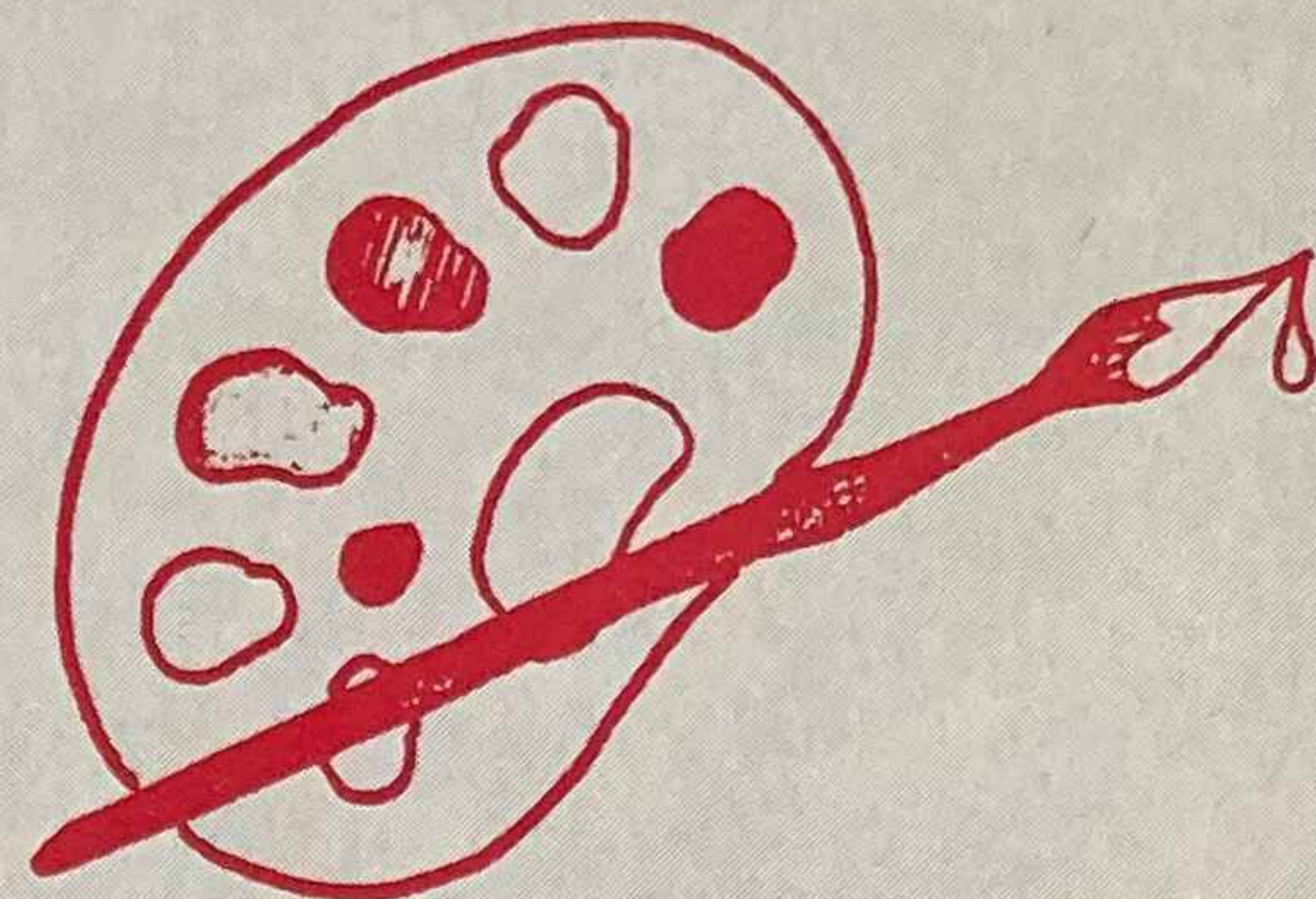
BUSINESS MACHINE CONSULTANTS
1435 DUNCAN STREET, WALNUT CREEK, CA 94596
(415) 930-9600

PICASSO

by Bill Dunlevy

This is the one to set the standards! Try the unbelievably outstanding computer graphics system that Soft Sector magazine reviewed, saying "PICASSO is head and shoulders above the rest." PICASSO's large, helpful menus eliminate cumbersome graphic commands while giving you an unparalleled selection of 64 pre-mixed colors and over 20 different brush styles. PICASSO is Keyboard and Joystick controlled in an "directional" or "freehand" format offering an endless range of innovative, creative styles. But wait—there's more! With PICASSO one is never restricted—you can create ANY kind of shape or form from elliptical pentagons to perfect circles! And use your picture files with MichTron's FREEZE FRAME graphic printing utility for top-notch hard copy pictures. PICASSO is THE computer graphics program that'll turn your imagination into reality.

PICASSO (requires 256K) \$99.95
FREEZE FRAME (requires 128K) \$39.95



CORNERMAN

by J. Weaver Jr.

Does your desk look like an old battlefield littered with notes, calendars, and calculators? Let MichTron's latest tool for Sanyo computers come to your rescue. Acting as the perfect servant, Cornerman waits patiently in memory while you use another program such as WordStar™. When you need to make a calculation or leave a note—no problem. With one press of a key, a portion of your screen is instantly replaced with Cornerman. Cornerman will leave notes for you, do mathematical problems, instantly recall names and phone numbers, plus much more! Once you've finished with Cornerman, he quickly departs. You're put back into your program without a single item being disturbed. Hire the perfect servant for your Sanyo today... give Cornerman a try!

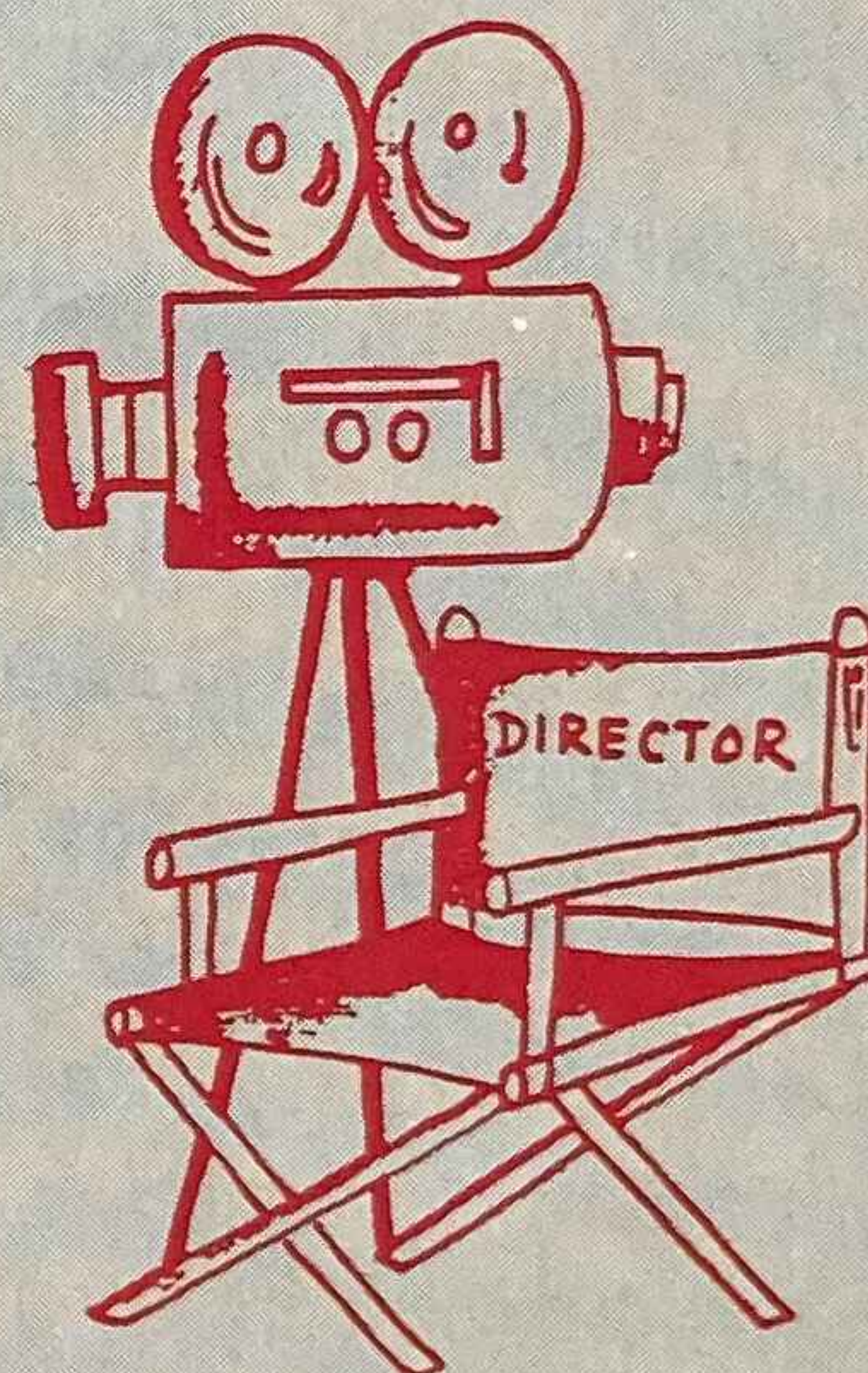
CORNERMAN \$49.95



FREEZE FRAME

FREEZE FRAME is an incredibly versatile and powerful screen dump program. It works with most of the major graphics printers, and any other printers that can emulate the popular brands. FREEZE FRAME prints graphics and text from the screen, or straight from a disk file! One unique feature is that you can choose the printed hue of all the screen colors, unlike those OTHER screen dump programs! FREEZE FRAME can be accessed from DOS, machine-language, or BASIC with the touch of a key. You can even use a Quadram or Cannon Ink Jet printer for **FULL COLOR** pictures! With FREEZE FRAME, you can really get the picture... and KEEP it!

128K Machine Required \$39.95



MIGHTY MAIL

by Timothy Purves

The list of data bases just goes on and on, so how do you decide which one is best for you? First, take a look at your needs. There are data bases that do anything from calculations, word processing, billing to even writing checks. These are great, except that for every new feature that they add, they add to the price, increase user confusion, and decrease the speed of their software. MIGHTY MAIL is designed to do one thing, maintain an accurate mailing list. It holds over 1200 files, sorts incredibly fast, has custom print routines, and interacts with the user like a dream. So if you are looking for a data base that is designed to do just one thing, and to do it better than anything else on the market, come on over to MIGHTY MAIL... things couldn't be simpler!

MIGHTY MAIL \$99.95



DS DOS PLUS 2.11

by Tim Purves

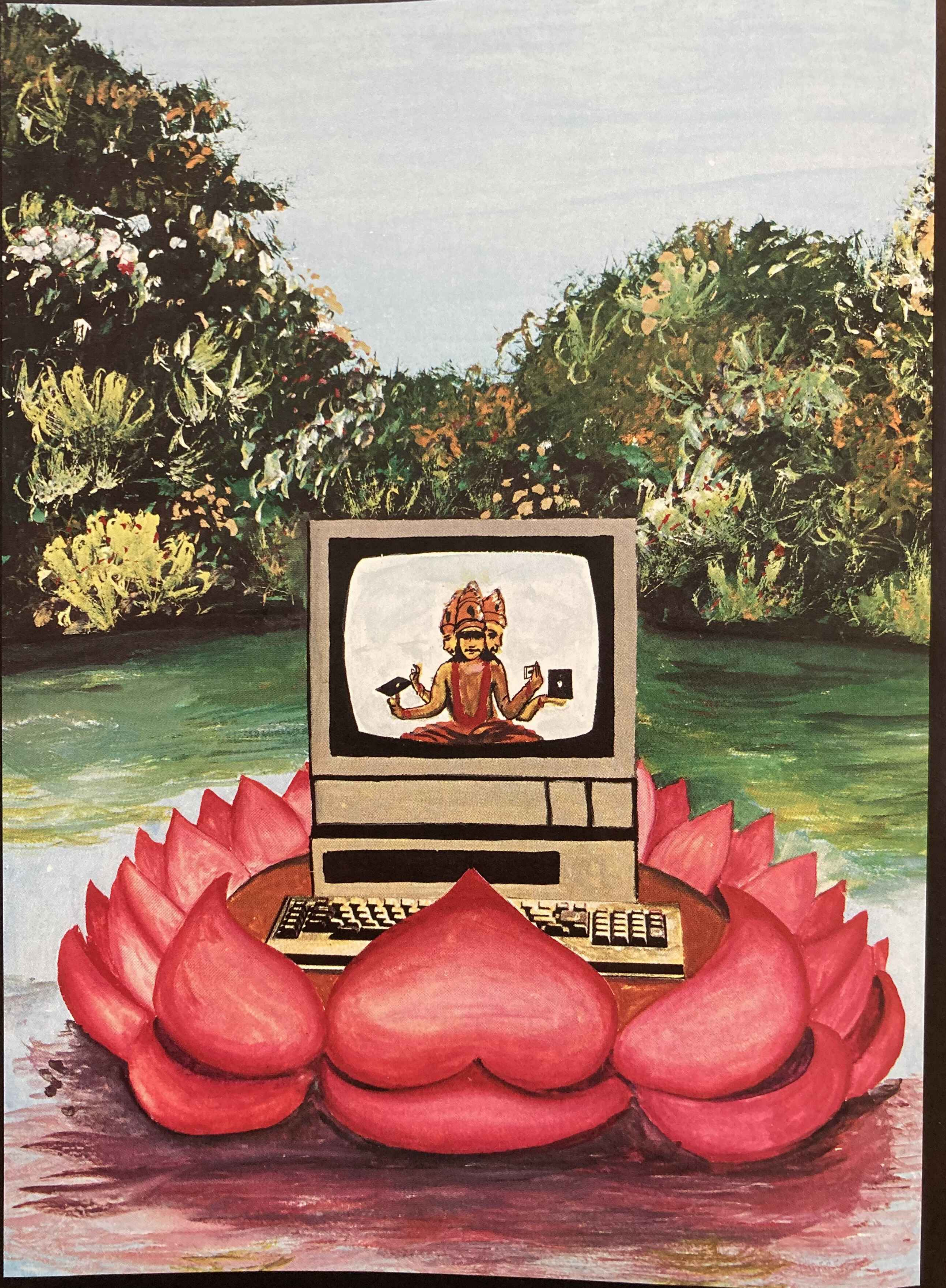
80 track drives? 10 sector formats? What does that have to do with MS DOS 2.11? The answer: ABSOLUTELY NOTHING, but it has a lot to do with DS DOS 2.11. DS DOS 2.11 is specifically designed to support 80 track drives on YOUR Sanyo 550/555 computer. Along with this, it also allows for 10 sector formats on regular 40 or 80 track drives (single or double sided). And that's not all! With this new version of DS DOS, we've totally rewritten the FORMAT and DISKCOPY utilities to increase speed and performance. But let's talk versatility. This one DOS can control any combination of 40 and 80 track drives, read any 40 track disk in an 80 track drive, read or write 8, 9, or 10 sector formats on a 40 track drive, handle up to 512K memory, remember date on reset, and format for 160, 180, 200, 320, 340, 360, 400 or even 800K (80 track double sided) on a disk. If that's not enough, then how about an extra 11 utilities to help you use your DOS better? What else could you possibly want? Take a closer look at DS DOS PLUS 2.11 TODAY. From MICHTRON... of course.

DS DOS PLUS 2.11 \$49.95
DS DOS PLUS 1.25 \$49.95

MichTron

576 S. Telegraph
 Pontiac, Michigan 48053
 Orders & Info: (313) 334-5700

**FOR YOUR CONVENIENCE,
 NOW AVAILABLE FROM YOUR
 FAVORITE SANYO DEALER!**



THE LOTUS PETAL ENVELOPS THE SANYO

*If greater IBM compatibility has been
your major complaint about the MBC-550 series,
Sanyo has been listening*

By Charlotte and Brian Stone
Soft Sector Contributing Editors

It was about 6:20 p.m. when the phone rang. I answered it and was greeted by the voice of Mr. Paul Wagner, eastern regional sales manager for Sanyo Business Systems. Paul was in town with Mr. Arthur Shebar, Sanyo's national sales manager and Mr. Kaz Kubota, their new chief engineer.

Paul had called with an invitation for Charlotte and I to join them for dinner and a preview of two *very special* new products. One of these products will be the topic of this article. The second product will be covered in the next issue (at the request of Sanyo).

The special product we were shown is what everyone has been asking for ever since the MBC-550 series was introduced as an IBM-compatible computer. The modification has arrived which allows *Lotus 1-2-3* to run. By modification I mean the "1-2-3 Board," or "Lotus Board" as it is already being called. The official name is "Video RAM Board."

Now that we've spilled the beans, it's time to back up and give you some background about Sanyo's game plan since day one.

Sanyo started off with a five year (or five step) game plan which is as follows:

- 1) Introduction of the MBC-550/555 (single-sided drives).
- 2) Introduction of the MBC-550/555 (double-sided drives).
- 3) The "Lotus" board for increased compatibility.
- 4) To be announced.
- 5) To be announced.

They have reached step three and we will be announcing step four in the next issue of **SOFT SECTOR**. As we all know, Sanyo has some of the most reliable and well-built equipment available in the computer industry today. This fact and their continual updating and introduction of new and better equipment shows us all that they will be a force to be

reckoned with. The MBC-550 series will be improved on with new models, but this latest news (the Video RAM Board) shows us all that they do not intend to forget the customers who have supported them up to this point. Enough history; let's get into what this article is really about.

First, let's take a look at what comes in the box that is about 11 inches by 14 inches by 2½ inches and will have a retail price of \$199.95. The most important part is the PC board, which is 10¼ inches long and 4⅝ inches wide. It has an RCA connector for composite video output and a nine pin D subminiature connector for the RGB video output (exactly the same connector as the IBM PC). Yes, you will need a new cable to run your RGB monitor. There is a diskette with the new operating system MS-DOS 2.11 with *I/O SYS [VB]* (VB stands for Video Board) and the long awaited GWBASIC. There will also be a set of instructions for installation. If there will be more in the box, we will have to wait and see, because the sample we have is not from the production run.

The installation of the board is simple, takes about 30 to 40 minutes and goes like this:

- 1) Unplug all power and connecting cables.
- 2) Remove the five screws holding the cover.
- 3) Remove the two screws holding the logic board in place (at the rear).
- 4) Slide the logic board halfway out of the cabinet.
- 5) Unplug the speaker, power supply and disk drive cables. (Make note of all cable orientation for reconnection.)
- 6) Finish removing the logic board from the chassis.
- 7) Remove the cover from the rear of the logic board labeled external.
- 8) Locate the two rows of 31 metal pins on the main logic board and the large black connector on the video board.
- 9) Orient the video board (component side down) over the logic board and carefully insert the pins into the connector. You will have to make sure that the video output connectors are lined up with the opening in the rear cover plate. If you have an RS-232 board installed, route its cable under the new video board.
- 10) Install the screws to mount the video board to the metal plate attached to the rear of the logic board. There will probably be nylon "standoffs" supplied with the production units to attach it to the main logic card.
- 11) Carefully reinstall the assembled unit into the chassis making sure that the main board is between the tabs in the side of the chassis. Only insert it halfway at this point.
- 12) Reconnect the cables to the speaker, power and disk drives. Finish inserting the logic board and replace the screws.

The authors, Charlotte and Brian Stone, have been involved with computers since their purchase of the original Radio Shack Model I in July of 1978. Since April 1984, Charlotte has been using the Sanyo in her daily work routine as office manager for a Detroit firm. Brian has been using a variety of Sanyos since May of 1983. Of the five computer systems they presently own, two are Sanyos.

- 13) Double check all connections.
- 14) Reinstall the case, hook up your monitor and dig out your copy of *Lotus 1-2-3*.

Now that we have the board installed, let's find out what it does. In the MBC-550 series, the screen memory was positioned at the top of RAM no matter how much memory was installed — 128K, 192K or 256K. This is one of the big reasons that *Lotus* and other programs would not run. The IBM PC has a special bank of memory set aside for video. Now what this board (and the new operating system) does is process all of the video through the new RAM that is located on the new board. This is what gives us the compatibility we all wanted and Sanyo needed. One thing you must be made aware of is that we are still not at 100 percent compatibility, but we are in the range of about 80 percent plus. More about this later.

The software that will be compatible will partially be controlled by the Sanyo keyboard and the RS-232 port. There are some differences between the Sanyo keyboard and the IBM PC, the biggest being that the "ALT" (alternate) key is absent on the Sanyo. If a program needs the ALT key, it can be simulated by using SHIFT and CONTROL pressed at the same time. A problem with this is that some software looks for SHIFT-ALT, which we cannot simulate because we already used SHIFT to get ALT. I think Sanyo is listening and may come up with a new keyboard someday.

The biggest boon to the corporate computer user having an IBM PC at the office is that they can purchase a Sanyo MBC-555 rather than spending the high price for a PC to be able to take their work home. This fact, plus all of the home users who want PC compatibility, should allow Sanyo to be able to sell the 20,000 computers per month that they expect as soon as the 1-2-3 Board is available in quantity. The 20,000 pieces per month accounts for about three-fourths of the computer divisions sales. The availability of the board is expected to be limited for the first 90 days (through December), so if this is what you want for Christmas, get your order in now.

Now let's look at software. We have not had the 1-2-3 Board very long and, worse yet, must return it (at this time). We will have one installed permanently in the near future. The testing that has been done was with every piece of software we could get our hands on in short notice.

One major point to remember when considering what to purchase is that, if the software must be run from its own disk (with a self-loader), it probably will not work.

The software we tried falls into three basic categories: *yes* it works, *no* it will not work, and third, it *almost* works.

The YES group.

SuperCalc ³	Spreadsheet including all of the graphics
Textra Jr.	Text editor including the demo
Condor	Database
10 Base	Database
Turbo Pascal	Borland IBM Version 1.0
MultiPlan	Compaq DOS Version 1.06
Knowledgeman	Database and programming language V1.06
R Base 4000	Database
PC-CALC	Spreadsheet
PC-FILE	Database
Please	Database
Main Street Filer	Database

The NO group.

Verbatim
CP/M-86
SideKick
PC-TALK
Tobias-Managing
Your Money
UCSD P-System

Disk drive analyzer (1)
Digital research (1)
Windowing (2)
Communications (3)
Home budgeting package (1)
Programming language and operating
system (1)
Database and programming language
(4)

Savy

- (1) Self-booting
- (2) Requires Alternate-Question Mark Key to initialize.
- (3) RS-232 ports not at the same address.
- (4) Unacceptably slow keyboard scan routine in the program.

The ALMOST group.

TheIDir DOS shell, utility which simplifies commands. Most functions work, i.e., *COPY, TIME, DATE* and *RUN*.

The software listed above was tested on a limited basis. This list is not intended to be the final word as to the suitability or a 100 percent guarantee that the product will function properly. The versions tested may not be the same as you will find on your dealers' shelves. Newer or later versions may react differently than those tested. In the near-future, we hope to be able to have a list of software from Sanyo which will be more certain as to compatibility. As

soon as this becomes available, we will advise our readers. According to Arthur Shebar — but not tested by us — all of the PFS software for the IBM PC functions properly.

According to our conversation with Arthur Shebar, "the addition of the Video RAM Board should open additional avenues of expansion for the MBC-550 series. Now we can see the after-market arena getting into the act by developing expansion units for additional memory, hard disk drive adapters and many other products. Once we have additional memory, it could lead to the use of products such as *dBASE III, Framework* and *Symphony*, to name a few."

We now know why Arthur, Paul and Kaz were so excited about the introduction of the "1-2-3" or "Lotus Board," as Paul calls it. This will put some real punch into the Sanyo MBC-550 series, something it has deserved all along. Yes, there will always be a new and better machine and many will be from Sanyo. But most of the other manufacturers just develop a new product and try to sell you the new one rather than upgrading what you already have.

Both Charlotte and I think we should all take our hats off to Sanyo for not forgetting the customers who have supported them up to this point. I am sure we can all look to Sanyo for continued support of this fine product.

We would like to thank Arthur, Paul and Kaz for their hospitality and time in showing the Video RAM Board and the other new product that is coming for year-end introduction. We hope all our readers will return next month for the introduction of Sanyo's other new product.

Lotus and 1-2-3 are trademarks™ of Lotus Development Corporation.



Synergistic Software Presents

Magic Windows:

Ever find yourself without a calculator or an ASCII table and in an editor? Ever need to make that quick phone call and not have the number handy? With MAGIC WINDOWS you can have all that and more. MAGIC WINDOWS is a co-resident program which allows access to a pop up menu from within ANY program with just the press of a special key sequence. When you exit MAGIC WINDOWS you will be returned to your previous program right where you left off. MAGIC WINDOWS comes complete with the following:

- ***ASCII/ GRAPHIC CHARACTER TABLE
- ***CALCULATOR AND BASE CONVERTER
- ***NOTEPAD — Allows you to save notes on disk
- ***PHONE LIST — Database for phone numbers
- ***CALENDAR CALCULATOR

MAGIC WINDOWS — Only \$39.95 (Req 192K min)

Instadisk:

This RAMDISK SW allows fast system memory to act like a disk device. The size of the disk may be set to any portion of available memory. Only \$19.95 (Reg DOS 2.1, 256K min)

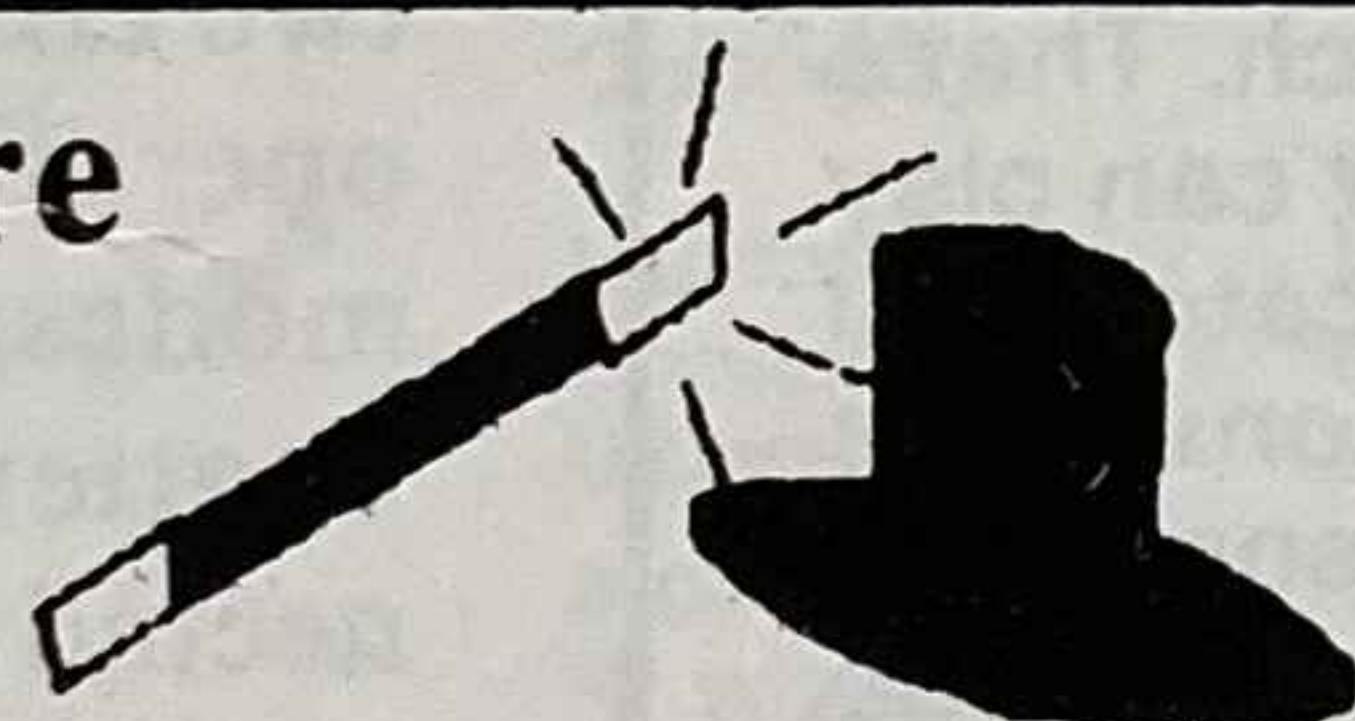
Printset:

Menu driven program which allows the user to set characteristics of an EPSON, GEMINI or compatible printers. Only \$17.95

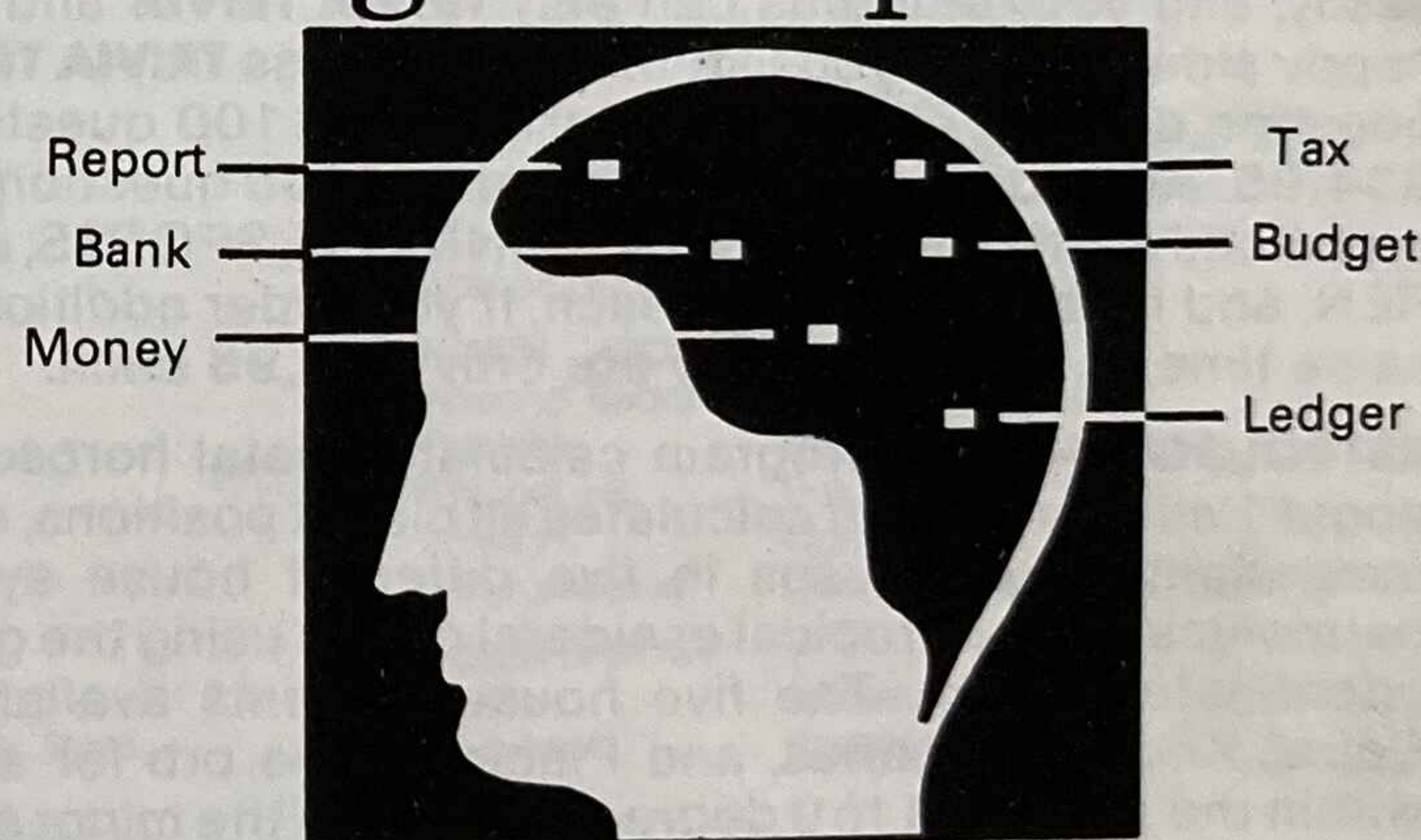
Synergistic Software

(214-436-9042)

1593 Valley Pkwy., Lewisville, TX 75067
Please send check or money order. Allow 3 weeks.



The solution to a problem changes the problem



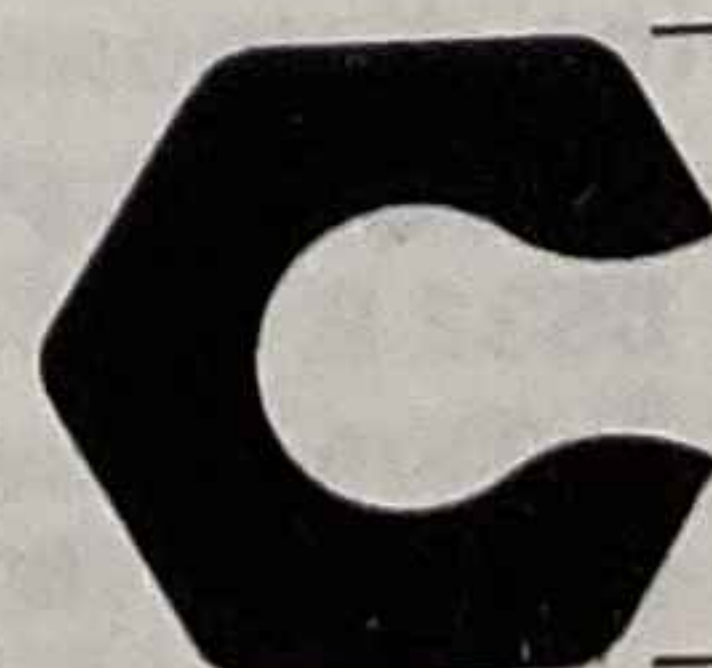
Have a financially sound mind with our Personal financial Management System (PFMS)

If you would like accurate and timely information about your financial situation, the PFMS can help.

Enter your transaction data on screen, and the PFMS does the rest. You can print reports, budgets, display bar graphs, print ledger enquiries that are easy to read and understand.

Requires 128K, 320K disk printer.

PFMS Canadian \$79.95
PFMS U.S.A. \$59.95



COMPUSOFT

P.O. BOX 11659, EDMONTON, ALBERTA T5J 3K8. (403) 423 1175

Continued from Page 39

SWITCH TO FORMAT

Editor:

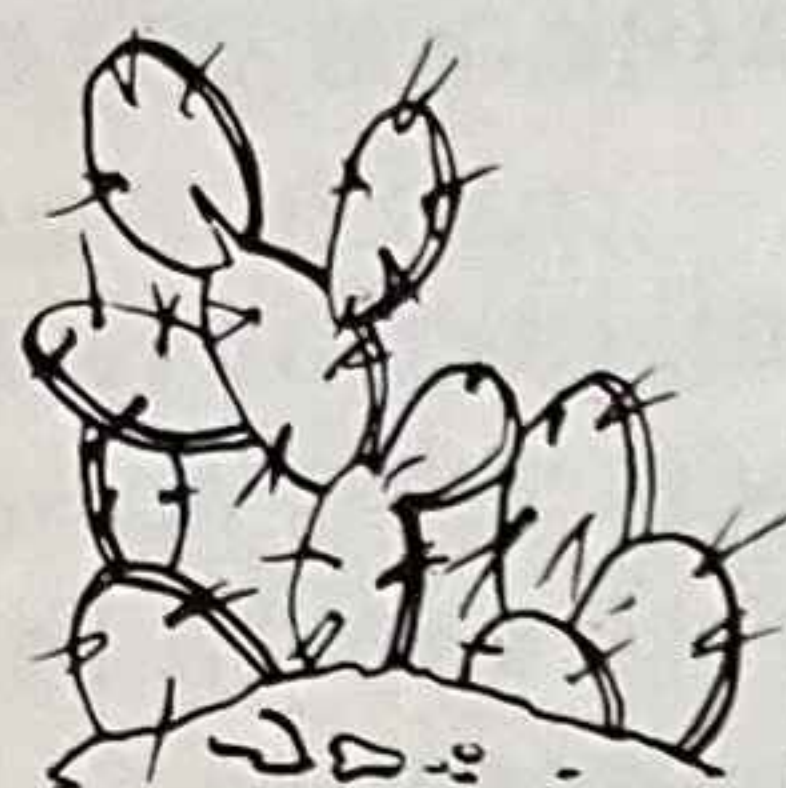
For your information, Sanyo has a utility disk that can be used to copy a single file from one disk to another when you only have a single drive system like I do. The program is called *SCOPY* and, in their letter to me, you send a blank disk and a check for \$3.50 for postage and handling.

How do you copy the two hidden files on the system disk to other disks so that you can boot the machine on power-up using any disk? I could *DISKCOPY* the system disk and delete the unwanted files and

then copy each of the other programs needed, but that seems too time consuming. Is there a better way? My supervisor and I need to know this (he also has a Sanyo 550).

Edward R. Bowers
Machesney Park, IL

Editor's Note: When you format a new disk, you should use the command *FORMAT /S*. The */S* switch copies the two hidden files and *COMMAND.COM* to the new disk. Also, you can use the */V* switch to add an 11 letter volume name to the new disk when you format it (with MS-DOS 2.11).



PRICKLY-PEAR SOFTWARE

QUALITY SOFTWARE FOR THE SANYO 550 SERIES

VIKING! — This famous simulation of running a Norse holding while you try to become King or Queen is finally available for your Sanyo. Now you can experience the most popular simulation of all time and find out for yourself why clubs formed all over the world to play this game. Do you have what it takes to start as a Land Holder, fight off the raiders and rats, acquire land, build an army, equip expeditions, set taxes, and manage your many assets? There is no other simulation that compares with **VIKING!** For 1 to 4 players, games take 2 to 4 hours, and there is a save the game feature. — **\$34.95**

TRIVIA TRIVIA — As many of you know, trivia fans are the nicest people, and now your favorite computer can be magically transformed into the ultimate trivia game. This game comes with 1100 questions in five categories, and there are already four more question disks available with 1100 questions each. That's 5500 questions!! You can play **TRIVIA TRIVIA** by yourself or up to four can play against each other, and you have options to set the game length. Educators will want to note that a program is included to develop your own questions disks easily, and your students can play **TRIVIA TRIVIA** and learn their lessons as a happy side effect. If you like trivia, don't miss **TRIVIA TRIVIA**. The game with the question disk development program and 1100 questions in five categories is **\$34.95**. Additional question disks with 1100 questions each are available with questions on the BIBLE, ENTERTAINMENT, SPORTS, and questions for CHILDREN, and these are **\$19.95** each. If you order additional question disks at the same time as the game they are only **\$14.95** each.

ASTROLOGY — This program calculates natal horoscopes to an accuracy of about 1 minute of arc. It calculates all planet positions, moon, nodes, midheaven, ascendent, house cusps in five different house systems, all aspects, and harmonics. It does tropical or sidereal charts using the geocentric or heliocentric coordinate system. The five house systems available are Regiomontanus, Equal, Koch, Campanus, and Placidus. The orb for aspects can be specified within the range of 1 to 9 degrees, and even the minor aspects are computed. All you have to know is the time and place of birth. This program does hours of calculations in just five minutes, and is in use by many professional astrologers. **\$34.95**

FANTASY GAMER'S BONANZA PACK — This package of programs is for the fantasy or role-playing gamer. These are not games, but rather useful programs that help a game master generate characters, keep track of them, and aid in the conduct of the game. It includes 12 programs — all menu driven — and is easy to use. If you play fantasy games, this is what you have been waiting for. It does everything. It will even roll the dice for you! **\$34.95**

FOR ORDERS OR QUESTIONS CALL 1-800-223-5369 EXTENSION 256
Specify System on order

Your Personal check is welcome - no delay. Include \$1.50 shipping for each program ordered. (Shipping free on \$50.00 or larger orders). AZ residents add 7% sales tax. Orders shipped within two days.

Dealer Inquiries Welcome

Send Order To: **PRICKLY-PEAR SOFTWARE**
8532 E. 24th Street
Tucson, Arizona 85710
(602) 886-1505



Continued from Page 66

TAKE THE ANGST out of April 15th with the new *Tax Package* from A.J. Software for the 550 series. The *Tax Package* contains 10 programs — one for each income tax form — that will compute your taxes and fill in the proper form on your printer. Included in the package are a program that acts as a calculator and a separate program to print the IRS forms. Also included is a loan amortization program that calculates monthly payments of a loan over a number of years.

The 10 *Tax Package* programs can be purchased on two disks for \$52.95 or any five that meet the needs of the purchaser can be ordered on one disk for \$24.50 plus \$2.45 S/H. The loan amortization, form print, and calculator programs are included with any configuration. For more information, contact A.J. Software, P.O. Box 11581, Pittsburgh, PA 15238; (412) 963-1754.

* * *

COMMUNICATIONS SOFTWARE for your Sanyo is now available from the Norton-Lambert Corporation. *Lync* is a communications program that can transfer any type of file between two computers, even if they use different operating systems. It operates in four modes: terminal, *Lync*, remote and unattended. With two terminals connected and both running *Lync*, they are in a "chat" mode where characters typed into one keyboard appear on the other's screen. the remote operation allows the user to control another computer from a remote terminal while both are running *Lync*, and the unattended mode permits automatic data transfers late at night when the phone rates are reduced.

Lync features an on-screen manual, complete modem control over all popular modems, a choice of four protocols, and precise error checking. It is capable of 19,200 Baud transfers to a hard-wired computer and all parameters can be saved to disk for reloading.

Lync is available for \$195 from the Norton-Lambert Corp., P.O. Box 4085, Santa Barbara, CA 93103; (805) 687-8896.

The preceding products are currently available for the Sanyo 550 series computers and will be reviewed in a future issue of *SOFT SECTOR*.

RACKSELLERS

Springs
Boca Raton
Brooksville
Clearwater
Ft. Lauderdale

Hialeah
Jacksonville

Longwood
Melbourne

Merritt Island

Miami

Niceville
Orlando

Ormond Beach
Panama City

Plantation
Point Orange
Port Richey
Sanibel Island
Sarasota

Seminole
St. Petersburg
Stuart
Tampa

GEORGIA

Augusta
Atlanta

Columbus
Decatur
Lithonia

IDAHO

Boise
Moscow
Nampa
Pocatello

ILLINOIS

Bloomington
Chicago

Highland Park
Rockford
Urbana

INDIANA

Ft. Wayne
Indianapolis

Kokomo
Marion
West Lafayette

KANSAS

Lawrence

KENTUCKY

Louisville
Owensboro
Prospect

LOUISIANA

Gretna
Opelousas
Sulphur
Thibodaux

MARYLAND

Baltimore
Bethesda
Camp Springs
Millersville
Oakland
Pasadena
Riverdale
Savage
Silver Springs
Towson

MASSACHUSETTS

Danvers
Hanover
Waltham
Woburn

MICHIGAN

Allen Park
Ann Arbor
Berkley
Charlotte
Dearborn

Micro's Etc.
Software, Software, Inc.
All American Electronics
Southern Micro Computer Co.
Computer Exchange

Total Information Computers
Southern Microcomputer Co.
AA Computer Exchange
Florida Computer Resources
Electronic Specialty Products
City News Stand

D & B Office Equipment

Compuworld

Micro's, Etc.

Allstate Business Center
Computers, Computers, Computers
Computer Image
Precision Trading

MTS, Inc.

Advanced Business Systems, Inc.
Rainbow Computer Center

Micro's Etc.

Computer Systems Group

Computer Town

Micro's Etc.

Micro's Etc.

Computer Trends

Sanibel Audio

1 Computer Place

Family Computers

Home Computer Discount, Etc.

Software Connection

Computer Market Place

Personal Computer Center

Southern Micro Computer Co.

Ram, Inc.

A & S Software

Guild News Agency

Alboes Computers

Corr-Puters

Certified, Inc.

Western Computer & Office Supplies

H & S Computer Supplies

Canyon Computers & Communications

Computer Concepts, Inc.

J. Powell & Associates

Central Business Machines

Hyde Park Computers

Home Office Systems/DOS

Learn-A-Bit

Sunnycrest Business Systems

Bytex

A Computer Store

MicroComputers, Inc.

Toso Computer Shop

Computer Corner

Von's Computers

Foresight Solutions

Software Source

Computer Stall

Falsoft, Inc.

The Computer Supply Store

Sound Electronics

Home Computer & Software

Great Southern Computer Systems

Personal Computer Learning Center

Technology Equipment Center

Compudeo

Comp-U-Type

Englanders Pharmacy

RW Electronics Computer Center

Custom Computers

D & H Distributing Co.

A-OK Computers

Greetings & Readings

Microcon Computers & Softwarecenter

Computer Concepts

Computer Magic

Microcon Software Centers

Galaxy Computers

University Cellar

Family Computers

Computer Options

Alpha-K Computer Co.

DSL

Farmington
Fenton

Grand Rapids

Lapeer
Mt. Clemens

Novi
Owosso
Pontiac
Rochester
Royal Oak

Southgate
Sterling Heights
Troy
Union Lake
Wyandotte
Wyoming

MINNESOTA

Minneapolis

MISSOURI

Aurora
Columbia
Creve Coeur
Republic
St. Louis

MONTANA

Whitehall

NEBRASKA

Omaha

NEVADA

Las Vegas

NEW HAMPSHIRE

Berlin
Laconia

NEW JERSEY

Lake Hopatcong
Lawrenceville
Ocean City

NEW MEXICO

Albuquerque

Las Cruces

NEW YORK

East Rochester
Farmingville
Glen Wild
Great Neck
Lake Grove
Moers
Plattsburg
Rochester

Wappingers Falls

NORTH CAROLINA

Atlantic Beach
Carrboro
Chapel Hill
Raleigh
Winston-Salem

NORTH DAKOTA

Buxton
Riverside

OHIO

Ashland
Cambridge
Canton

Cincinnati

Columbus
Cuyahoga Falls
Euclid
Fairborn
Fairfield
Greenville

Kettering
Lombard
Mafeld Heights
Marion
Newark
Niles

North Olmstead
Poland
Ravenna
St. Clairsville
Toledo

Youngstown

ComputerTowns
Computer Control Systems
Petry Products
Bursma Electronic Dist. Co.

Programs Unlimited
Computer Corner
Business Computer Systems
Computer Plus, Inc.

Michigan Software
C/C Computer Systems
MichTron

Rochester Book Center

1-2-3 Compute

New Logic Computers

Popular Computer Centers, Inc.

The Family Room

Creative Center

Small Business Computers, Inc.

ComputerTech

Gerry's Book Co.

Computer Exercise World

Southland Electronics

Computer Concepts

C & M Associates

Franklin Computers

Softwaire Centre

Rambyte Computer Institute

Computers & Components

Computer Magic

ENS Computing

The Systems House

Jefferson Computer Center

Microcon Computer & Softwarecenter

The Computer & Software Store

Page One Newsstand

Programs Unlimited

Zia Computers

Zia Computers

Las Cruces Computers

Fox Computer Services

Datascan Computer Systems

Impact Computer Systems

P & T Computers

Programs Unlimited

Future Distribution

Adirondack Computer Supply

Computer Connections

Vixia Computer Center

Software City

VBS MicroSystems

Triangle Data Systems

Pascal

Computopia

Discount Computer Supplies

Systematics

Computer Associates

Infopro

Comtech

Micro's Etc.

Programs Unlimited

Cincinnati Computer Center

Video Barn

The Book Rack

Friend Chips

Computer Warehouse

Genesis Micro Systems

Microwave Magic

Hansbarger's

Electronic Connexion

Complete Computing

Programs Unlimited

Marion Computer Center

Mitey Byte

Perfect Computers

Softwaire Centre International

Big Byte Computers

Alpha Computer Services, Inc.

D & K Computer Sales & Service

Computer Gallery

Computer One

Software City

ALABAMA

Birmingham

Fayette

Flagstaff

Madison

Mobile

Montgomery

ARIZONA

Flagstaff

Mesa

Phoenix

Tempe

CALIFORNIA

Arroyo Grande

Folsom

Hayward

Huntington

Beach

La Jolla

Laguna Niguel

Lancaster

Los Angeles

Napa

Norco

Poway

Sacramento

San Diego

San Francisco

San Luis Obispo

Santa Maria

Santa Rosa

Sherman Oaks

Stockton

Upland

Vista

Wallingford

Walnut Creek

COLORADO

Aurora

Colorado Springs

Englewood

CONNECTICUT

Manchester

Meriden

Stamford

Wallingford

DELAWARE

Wilmington

FLORIDA

Altamonte

Computer Engineers Inc.

The Computer Store

Computer Shoppe

Computer Time

Madison Books

Mall Tel

Trade-N-Books

Datasystems

Mesa Computer Mart

Apollo Computers

Far West Computer Systems

Tri-Tek, Inc.

Books, Etc.

"Help's" Bargain Barn

Computers, Etc.

3E Software & Systems

Hammer Industries

Affordable Computers

JCS Computers

Desert Computing

Computer Phone Mart

Liberty Computers

West Custom Studios

Creative Computer Corp.

Softwaire Centre International

Byte & Floppy Computers

Programs Unlimited

Aquarian Age Computer Center

El Corral Bookstore

Paradise Computer Systems

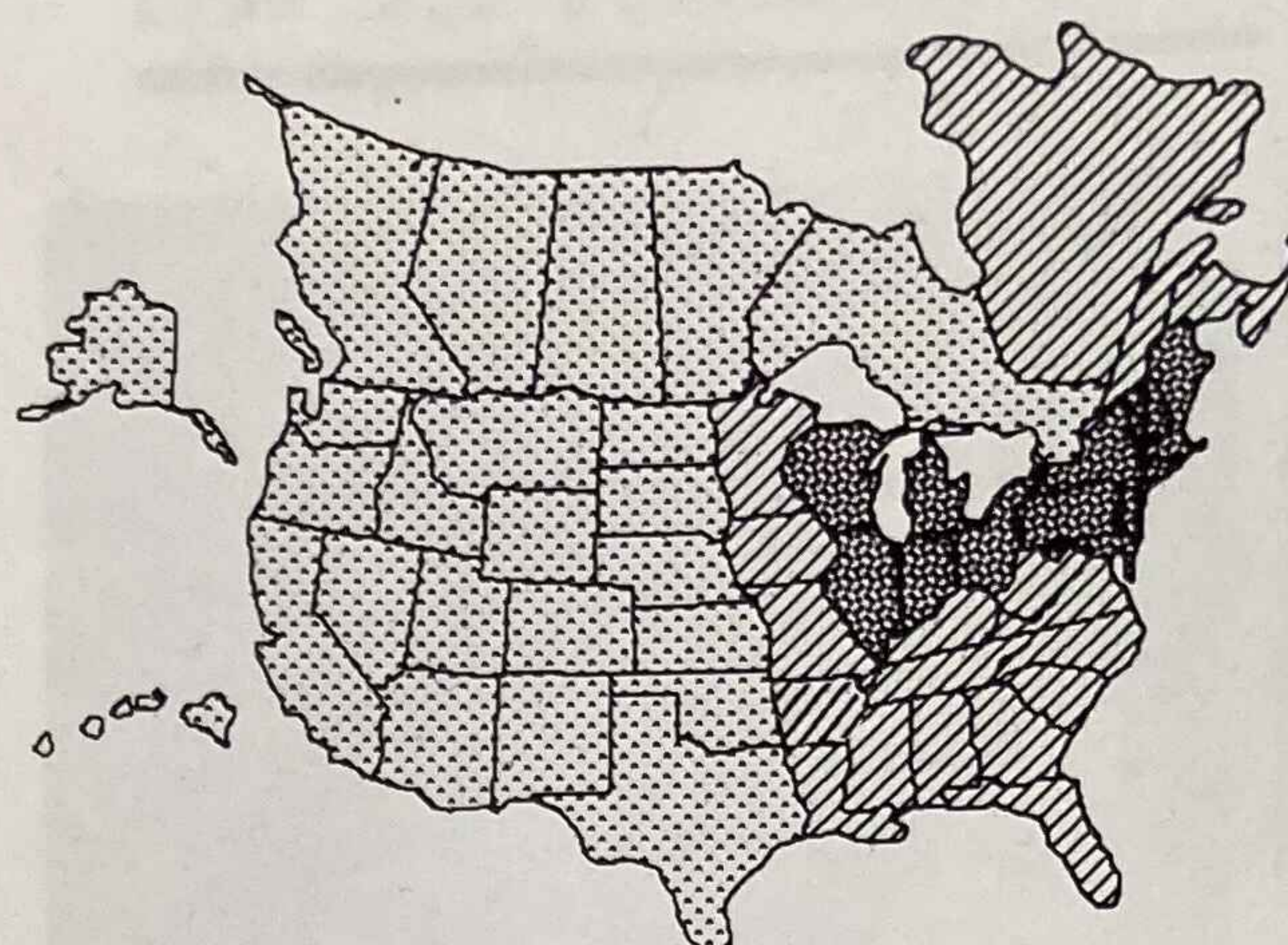
OKLAHOMA	
Oklahoma City	Merit Computers
Tulsa	Data Station — Tulsa
OREGON	
Beaverton	Creative Computers & Electronics
Eugene	University of Oregon Bookstore
Hillsboro	Quest Enterprises, Inc.
	Nomies Video Tec
Salem	Super Soft
PENNSYLVANIA	
Butler	Software Corner
Exton	Software City
Mt. Penn	Peripherals, Computers & Supplies
Philadelphia	Some Hole In The Wall
	Systems Design
Phoenixville	Stevens Computer Center
Pittsburgh	Computer Bug
Warrington	Computers Here
RHODE ISLAND	
Cumberland	Mike's CP & Software
SOUTH CAROLINA	
Charleston	
Heights	Software Haus
Columbia	Bytes & Bits
	ICT Computer Supply Center
TENNESSEE	
Knoxville	First Byte Computer Co.
TEXAS	
Austin	Capitol Micro Computers, Inc.
	Electronics Insight
	ABS Business Products
Dallas	Computer King
Houston	Sibley & Associates
	Texas Computer Products
	USA Hi-Tek
San Antonio	Wagner Bros. Computer Store
UTAH	
Logan	Sound Station
Provo	Lloyd's Business Machines
VERMONT	
Rutland	Computer Marketing
VIRGINIA	
Falls Church	Soft Cost
Fredericksburg	Salem Computer Center
Gloucester Point	Gloucester Electronics
Norfolk	Micro-Enhancements
Springfield	Fairfax Computer Corp.
Virginia Beach	Beach Business Machines
WASHINGTON	
Bellevue	Commercial Computer Systems
Centralia	Centralia Computer Center
College Place	Discount Computer Supply
Federal Way	Compu-Place
Marysville	Crown Microproducts
	More Than Games
Olympia	Axiom Computer
	Computer Centers
Renton	Puget Sound Electronics
Seattle	Bits & Chips
	Pioneer Computers
	R&K Enterprises
Spokane	Quality Software
WEST VIRGINIA	
Charleston	The Computer Tree
Morgantown	Computer Closet
WISCONSIN	
Janesville	Emerald Computers
Stevens Point	Mom's Computers
AUSTRALIA:	
SYDNEY	
Kingsford	Paris Radio Electronics
VICTORIA	
Melbourne	Computer Biz
CANADA:	
ALBERTA	
Calgary	Tesseract Computer Systems
	The Computer Shop
Edmonton	CompuSoft
	Computique
	Compu-ware
	Disk and Chip
	Kelly Software Distributors
ONTARIO	
Burlington	Burlington Business Systems
Kitchener	Home Computer Centre
Toronto	Computer Junction
QUEBEC	
Montreal	Lemond PC
ENGLAND	
East Sussex	Molimerx LTD

These stores carry **SOFT SECTOR** on a regular basis and may have other products of interest to Sanyo 550 series users. We hope you will patronize those in your area.

AD INDEX

The stores listed below carry **SOFT SECTOR** on a regular basis and may have other products of interest to Sanyo 550 series users. We hope you will patronize those in your area.

American Small Business	
Computers	30
A-OK Computers	53, 55
AA Computer Exchange	35
A.J. Software	37
AMA Software	57
B-T Distributors	61
BGW Systems	61
Binary Tree Technology	38
Block Marketing, Inc.	24
Business Machine Consultants	70
C-Tek Systems	58
C R Distributing	63
CM Associates	35
Certified Computers	42
Comp-U-Type	37
CompuSoft	75
Computer Associates, Inc.	43
Computer Creations, Inc.	36
Computer Engineers, Inc.	26, 49
Computer Gallery, Inc.	27
Computer Solutions	38
The Computer Toolbox, Inc.	34
Computer Town USA	43
DISKcount Software	51
Displayed Video	32
Diversified Computers	29
DownEast Diskette	29
Frontier Software, Inc.	20
Greywolf Technologies, Inc.	40, 41
Home Office Electronics Business Systems	46
ICR FutureSoft	5
Information Associates	17
Integrated Technologies	60
J & M Systems, Ltd.	IBC
The James River Group, Inc.	59
The Lemberger Company	62
Level IV Products, Inc.	48
Michigan Software Distributors, Inc.	62
MichTron	IFC, 18, 71
Micro Equipment Corporation	45
Migraph Software	44, 45
M.W.S. Computers	31
Oakwood Publishing	23
Olympic Educational Software	14
Owl-Services	22
Pacific Distributors	46
Palm Bay Software	46
Parkwyth Services	21
Pascal and Associates	33



Call:
Jack Garland
Garland Associates, Inc.
P.O. Box 186 S.H.S.
Duxbury, MA 02331
(617) 934-6546

Call:
Kate Tucci
Advertising Representative
9529 U.S. Highway 42
P.O. Box 385
Prospect, KY 40059
(502) 228-4492

Call:
Cindy Shackelford
Director, West Coast Office
12110 Meridian South — Suite 8
P.O. Box 73-578
Puyallup, WA 98373-0578
(206) 848-7766

Peripheral Products Distributing	51
Prickly-Pear Software	76
Sanyo	25
Sanyo City	19
Silver Fox Computers	12
Softsol	64
The Software Source	39
The Software Toolworks	39
Synergistic Software	75
Syntel Corp.	3
Systems Distributing	46
Systems Peripherals Consultants	22
Tex-Comp Users Supply Company	67
TMP Software	16
Total Learning Systems	7
U.S. Digital Corporation	65, BC
Wagner Brothers	44
Weaver Street Software	47
Wolfsangel	31
Writing Consultants	33

We encourage you to patronize our advertisers — all of whom support the Sanyo 550/555 series computers. We will appreciate your mentioning **SOFT SECTOR** when you contact these firms.

About Your Subscription

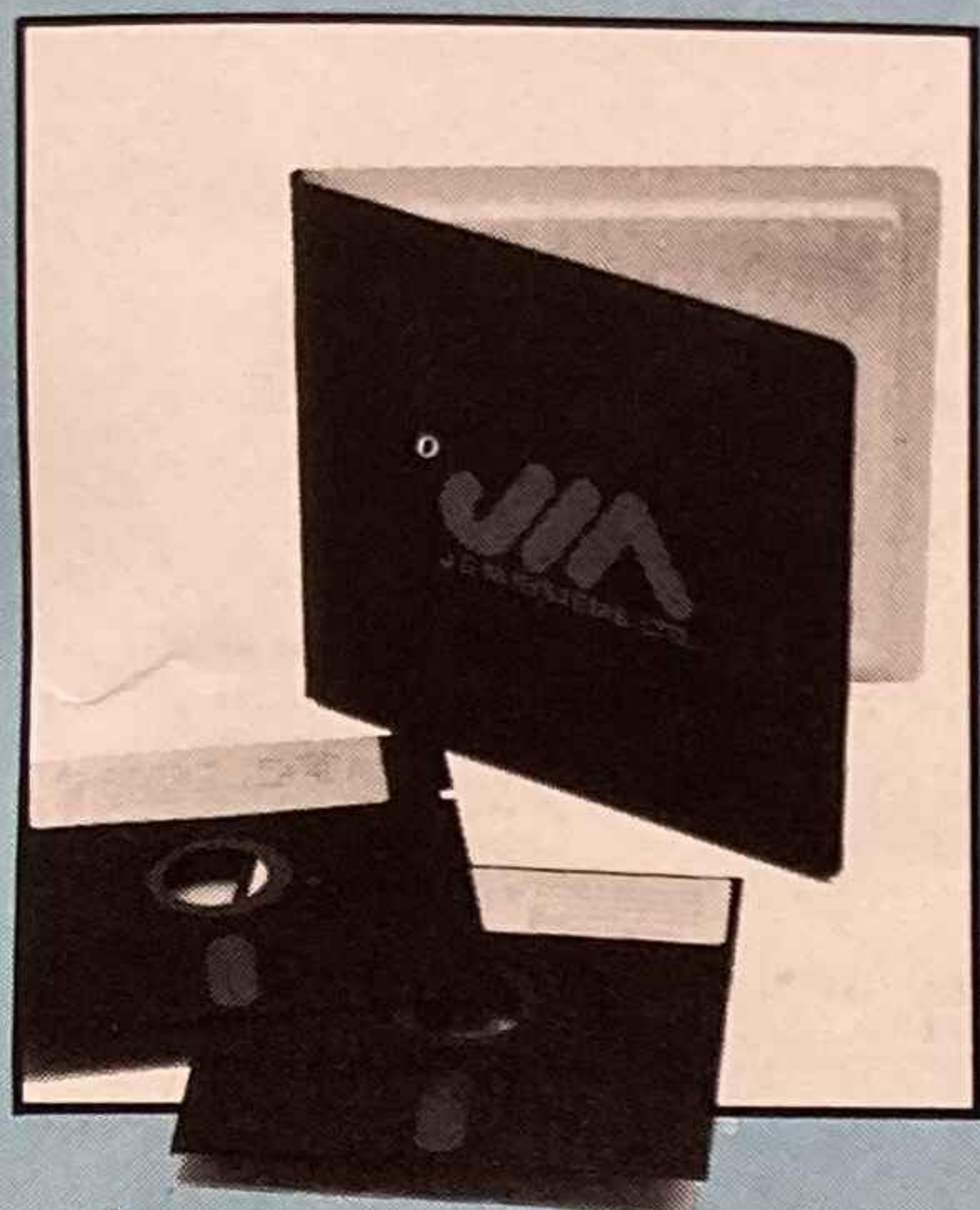
If you do not receive your copy of **SOFT SECTOR** by the 15th of the month of publication, send us a card and we will mail another immediately via first class mail.

You must notify us of a new address when you move. Notification should reach us no later than the 15th of the month prior to the month in which you change your address. Sorry, we cannot be responsible for sending another copy when you fail to notify us.

Your mailing label also shows an "account number" and the subscription expiration date. Please indicate this account number when renewing or corresponding with us. It will help us help you better and faster.

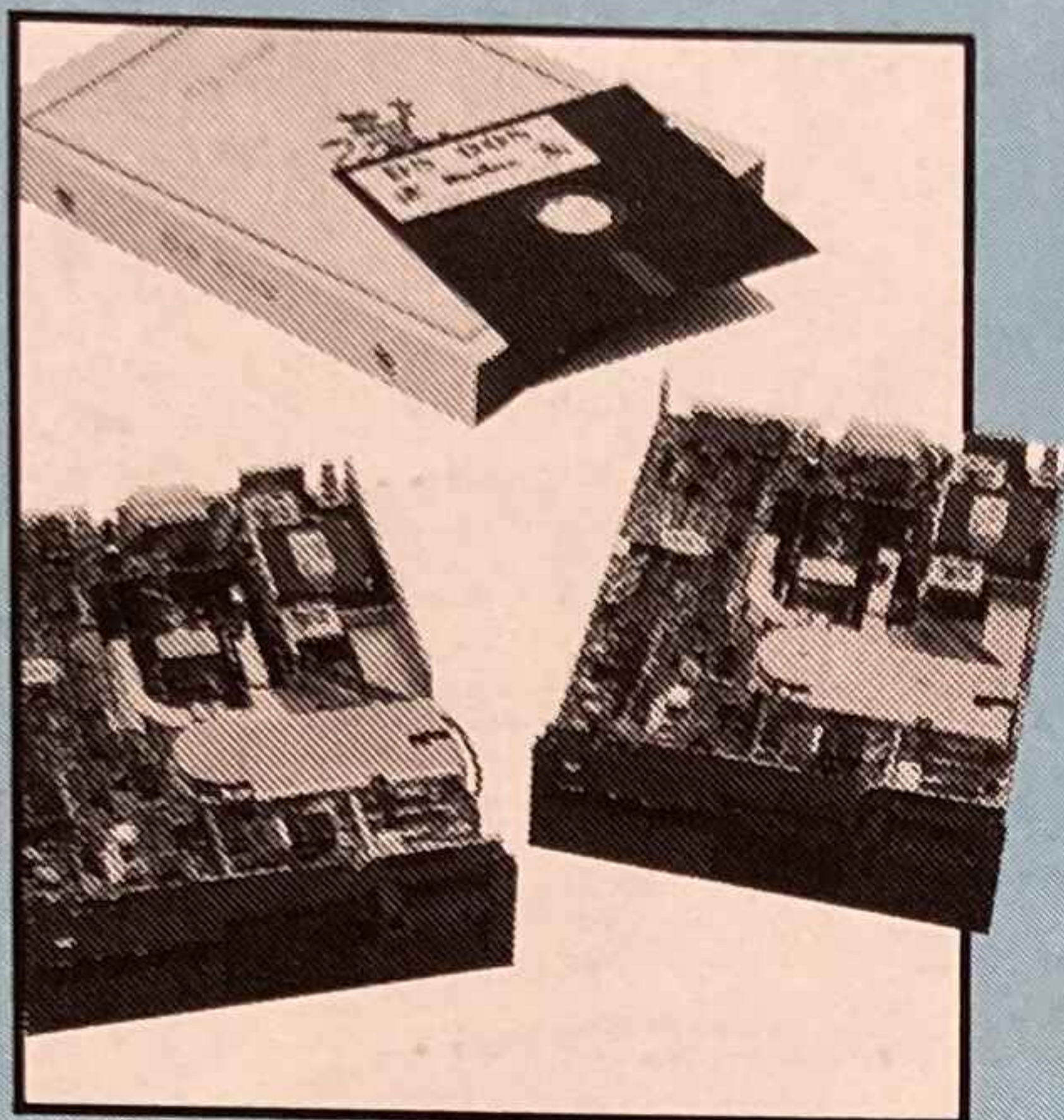
For Canadian and other non-U.S. subscribers, there may be a mailing address shown that is different from our editorial office address. Do not send any correspondence to that mailing address. Send it to our editorial offices at P.O. Box 385, Prospect, KY 40059.

Four Reasons Why J&M Systems is the Leader in Sanyo Peripherals and Upgrades



1. Memory Minder®

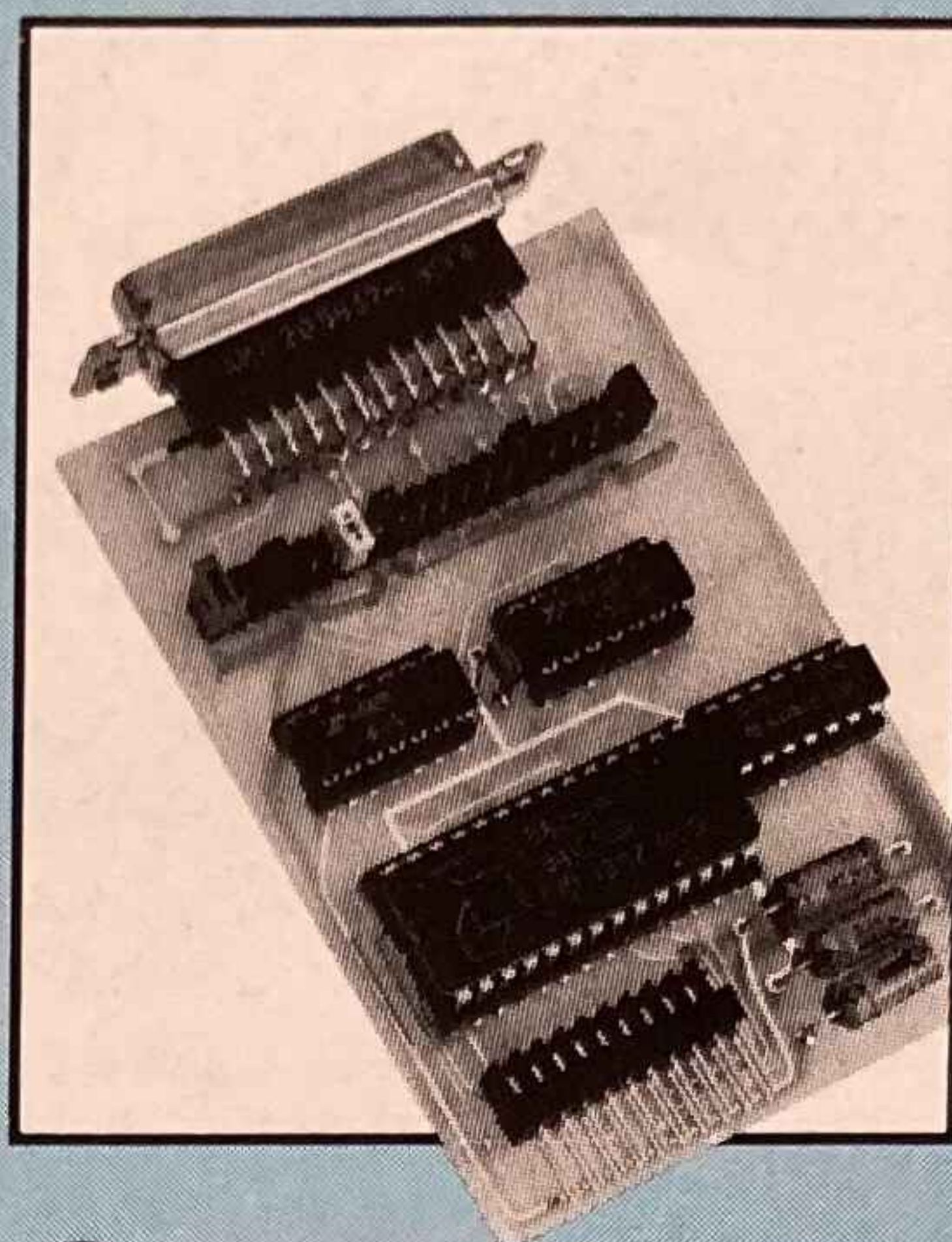
The most advanced disk drive analysis program available. Memory Minder can check and *correct* most disk drive problems *before* they cause data loss and down time. Includes two disks and easy-to-follow instruction manual. Only \$99.



2. Drive Upgrade Kit

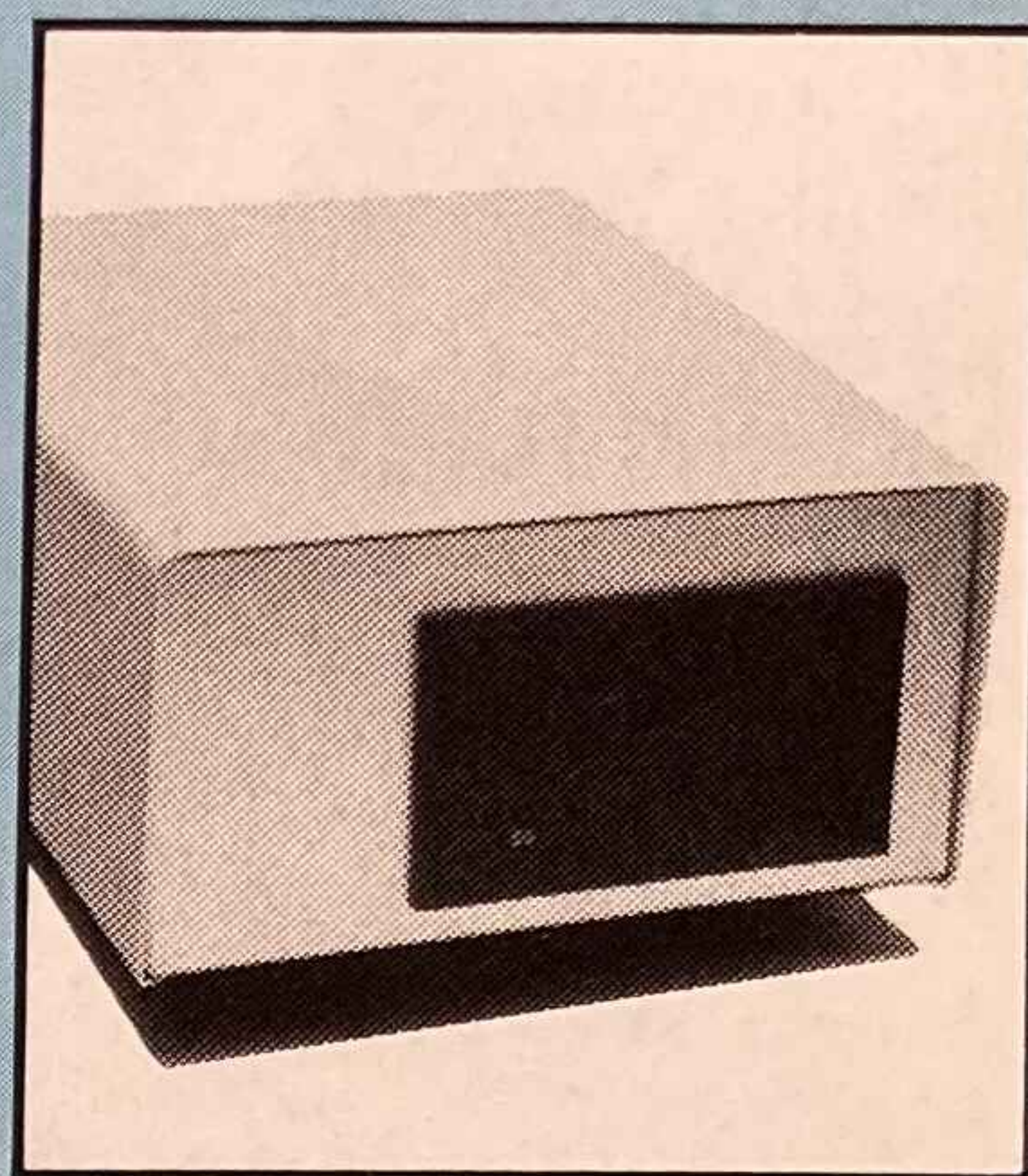
This kit allows you to upgrade your 160k disk drives to 360k capacity. You receive 2 disk drives, DS DOS* operating system, and installation instructions. The upgraded drives will open the door to more IBM software.

\$384 for either the 550 or 555.



3. RS-232 Board

Our board is better than "Sanyo compatible." With the J&M Systems RS-232, you can fully configure I/O lines to match your system needs. Buy our board for the same price as theirs and receive extra configuration ability FREE! Just \$99.



4. 5Mbyte Hard Drive

5Mbyte capacity hard disk drive complete with manual, host adapter and software. Installs in minutes. Only \$995. While supplies last! 10 and 15 Mbyte drives also available.

*DS DOS is a registered trademark of MichTron

To order, fill out this coupon or call (505/265-1501).

I'd like more information on these products:

☐ Memory Minder ☐ Drive Upgrade ☐ RS-232 ☐ 5Mbyte Hard Disk

Send me the following:

Qty.	Item	Unit Price	Total
_____	Memory Minder	\$ 99	_____
_____	Drive Upgrade	\$384	_____
_____	RS-232 Board	\$ 99	_____
_____	5Mbyte Hard Disk	\$995	_____

Name _____

Address _____

City _____

State _____ Zip _____

For those ordering with MC or Visa:

Card # _____ Exp. date _____

Signature _____

J & M SYSTEMS, LTD.

**137 UTAH NE
ALBUQUERQUE, N.M. 87108
505/265-1501**

SS 12/84

Simply fill in the account number, the first line completes itself. The Accounting Window provides typical accounting numbers and names preset for your type of business.

Your transaction code determines the specific accounting function.

Document number, for example: check number.

You make one entry at a time and The Accounting Window tabulates and balances totals for you.

The format matches standard accounting entries and descriptions.

THE WIDGET CORPORATION DETAIL: GENERAL LEDGER DECEMBER 31, 1984

BEGINNING BALANCE	11/30/84	# 99,999,999.99-
y Bank	12/12/84	9,999,999.99-
k of Atlanta	12/23/84	999,999.99-
ENDING BALANCE	12/31/84	109,999,999.99-

BEGINNING BALANCE	11/30/84	234,567.89
rtica Ck 2099 payroll	12/15/84	1,345.67
rtica Ck 2100 payroll	12/15/84	2,234.10
ntia Ck 3967 payroll	12/30/84	9,456.78
ntia Ck 3968 payroll	12/30/84	200.00
ENDING BALANCE	12/31/84	247,804.44

You can printout journals and statements at any time without having to close the books.

FINALLY, PRODUCTIVE ACCOUNTING SOFTWARE FOR SANYO USERS.

- If you can't tell a debit from a credit ...
- If you can't stand accounting or don't have time to learn ...
- If you don't have time to set up your accounts on a computer ...
- If you're not interested in programming manuals ...
- If you'd like to reduce your accounting headaches ...

Then your time has come!

The Accounting Window™ is a new generation of simple and affordable bookkeeping modules. General Ledger, Accounts Receivable, Accounts Payable — designed by Don Henry, CPA, to help small businesses enjoy smoother and more profitable operations — painlessly.

Consider these unusual benefits:

No setting up required: Do you know of any accounting software that can set up the books for you? The Accounting Window automatically creates ledger accounts by name and number for your type of business — be it a professional service, a small manufacturer, distributor, or retailer. You can easily change names or numbers, add or delete etc. This is the only general ledger program that's easy to set up and get running fast.

Practically no learning curve and no way to get lost: No multiple-level menus in the entire program. The "Window" stays on the screen with the function menu below. You always know what you're doing because the function is highlighted. All transactions are prompted in their fields within the window. And the output (reports, journals) looks just like the input. All you have to do is enter items from your

checks, etc. That's it. Just about anybody can do it the first time. The user's manual is slim and necessary only as a reference. You do not have to learn any accounting! Compared to this, nothing else is easy to use — not even the best selling programs on the market!

A most practical approach: The Accounting Window is designed to help small businesses solve real-world problems instead of adding to them. Take it one inexpensive module at a time, and integrate them later if you wish. With General Ledger comes a booklet, "How to Read and Analyze Your Financial Statement." The Accounts Receivable is really a "collection system," with a booklet, "How to Collect Your Debts." And Accounts Payable includes "When to Lube the Squeaking Wheel." Don Henry's pearls of practical accounting wisdom are spiced throughout, such as how to protect your assets from the IRS. The system also provides flexibility in setting up various journals for different purposes.

More advanced than \$1,000 systems!

For example, "statement of change in financial position" is now an essential factor in accounting. Yet it remains missing from any program we've seen, other than The Accounting Window. More examples below.

U.S. Digital Corporation
5687-H S.E. International Way
Portland, Oregon 97222
(503) 654-0668
Telex 888521

Some general ledger capabilities

- Up to 9,999 accounts with up to 99 self-balancing journals. Superb audit trails.
- Comparative balance sheet for current or 12 prior months, with prior year, year-to-date.
- Income statement for current or 12 prior months; Comparison with prior year, year-to-date, and budget.
- Clear and detailed statement of changes in financial position. Statement of changes in retained earnings.
- Separate accounts for all partners or Subchapter S shareholders.
- Prints statements at any time without posting or closing the books.
- Handles monthly, quarterly, or entire year's transactions with equal ease.
- Able to "plug" books at discretion of management to save time.

Some accounts receivable & payable capabilities

Up to 9,999 accounts. Prints statements, invoices, or analyses at any time without posting or closing accounts. Credit/collection system superior to mere aged analysis. Medical and legal billing soon.

Requirements

Sanyo MBC 550 or 555 with 128K memory. Color monitor looks fantastic but monochrome works fine.

Money back guarantee

It takes guts to guarantee software. We guarantee ours because we know it does the job. Order a full working version of the base module now. If it does not perform as advertised, return it with proof of purchase within 45 days and you will get a full refund — no ifs, ands, or credit exchanges. Take advantage of this opportunity in 1984.

Reasonable Prices

Base module (GL) \$195.00
Add-on modules (AR, AP) ea. \$150.00
Call now for VISA/MC or COD order.

U.S. DIGITAL™